

[fol. 2562] By Mr. Hurd:

Q. Mr. Lynah, what was the name of the company that you were considering going with at that time?

A. Brokaw Eden Company.

Q. What was its business?

A. Manufacture of domestic washing machines.

Q. Upon securing the leave of absence, did you join that company?

A. I did.

Q. About how long did you remain with it?

A. I remained with that company until the summer of 1920.

Q. Now, in the meantime, Mr. Lynah, did you have any communication from the du Pont Company regarding the rayon business to which you have referred?

A. I did, sir.

Q. In what form was that, and about when was it?

A. On December 31st.

Q. What year?

A. 1919. I had a telegram from Mr. W. S. Carpenter, Jr. informing me that the artificial silk arrangements had been consummated, and requesting me to come to Wilmington.

Q. Did you reply to that telegram?

A. I replied advising him that I would be in Wilmington a few days later, giving him the date.

Q. Mr. Lynah, I show you documents marked General Motors Exhibits Nos. 140 and 141, respectively, for identification, and ask you if those are the wire you received and wire you sent?

A. They are.

Mr. Hurd: I offer General Motors Exhibits Nos. 140 and 141 in evidence.

The Court: They are received.

[fol. 2563] (Said documents so offered and received in evidence were marked, respectively, General Motors Exhibits Nos. 140 and 141.)

Mr. Hurd: I would like to read Exhibit No. 140, if the Court please.

It is addressed to Mr. James Lynah, dated at Wilmington, Delaware, December 31, 1919, and signed Carpenter."

"Artificial silk subject practically settled. Can you leave for Wilmington today for consultation?"

By Mr. Hurd:

Q. Mr. Lynah, did you have a conference in Wilmington on this subject of rayon business following this exchange of telegrams?

A. I did.

Q. About when was that conference?

A. January 5, 1920.

Q. Where was it?

A. It was held in the du Pont Building, Wilmington, I believe in the office of Mr. Leonard Yerkes who was attached to the Development Department.

Q. Who was present besides yourself?

A. As I recall, Mr. William S. Carpenter and Mr. R. R. M. Carpenter.

Q. Was Mr. Yerkes present?

A. Yes, he was.

Q. Will you tell us the substance of the conversation that took place?

A. Well, as I recall it, Mr. Hurd, I was told that the artificial silk arrangements had been completed, and that Mr. Yerkes had been made executive officer of the proposed new artificial silk company, and that I had been appointed production manager.

I expressed my disappointment and dissatisfaction, and [fol. 2564] I believe left that meeting with the understanding that I would give a definite answer in a day or two.

Q. Did you give them an answer after that?

A. I did.

Q. In what form?

A. I wrote Mr. Carpenter in New York on January 6th that I was disappointed with the position that had been offered, that I had been led to believe that I would be put in charge of the artificial silk enterprise when it was consummated, and in view of my length of service and achievements with the du Pont Company that I didn't feel that I had been given the right consideration.

Q. Mr. Lynah, I show you a document that has been marked General Motors Exhibit No. 142 for identification and ask you if that is a copy of the letter which you sent to Mr. Carpenter on this occasion?

A. It is.

Q. I note that the date on it is ~~January~~ 6th, 1919.

A. That date is a mistake. It should have been 1920, sir.

Mr. Hurd: I offer in evidence, if the Court please, General Motors Exhibit No. 142.

The Court: It is received.

(Said document so offered and received in evidence was marked General Motors Exhibit No. 142.)

Mr. Hurd: I would like to read a portion of it, starting with the third paragraph. This is a letter from Mr. James Lynah to Mr. W. S. Carpenter, Jr., vice president of the du Pont Company, bearing date of January 6th, 1919, which should be January 6th, 1920, and starting with the third paragraph:

"In several talks which I had at odd times with Mr. [fol. 2565] C. A. Patterson and Mr. F. A. Felix du Pont, individually, and with Mr. Spruance and yourself, it was explained to me that the reason why I had not been appointed to any position during the reorganization of the company last May and June, was because I had been previously selected to handle the Artificial Silk enterprise"—

By Mr. Hurd:

Q. Was the rayon business then known as "artificial silk"?

A. Yes, sir.

Mr. Hurd: (Continuing):

"regarded as a most important undertaking, for which I was peculiarly qualified. You may recall that in a conference in Mr. Lammont du Pont's office, on October 30th, at which you and Mr. Spruance were present, arranged for the purpose of learning Mr. du Pont's views upon my application for a two years' leave of absence, Mr. du Pont said he believed that I should have felt complimented in having been selected to handle the Artificial Silk enterprise.

"The Executive Committee's resolution appointing Mr. Yerkes 'Executive Head' of the silk company, clearly designated him as the one to handle the enter-

prise. My appointment as 'Production Manager' does not sufficiently define my status. When the proposed company is completely organized I may find myself in a distinctly subordinate position. Naturally, I do not understand the reasons why. I have been in the employ of the company fourteen and one-half years, Mr. Yerkes about two years. What conclusions should one draw? [fols. 2566-2570] "Having in my mind experiences in the Newburgh enterprise, and considering events of the past six months, I could not at this time return to the employ of the du Pont Company and work with that energy and initiative which only the hope and expectation of fair and considerate treatment can stimulate. I have therefore, decided to remain with the Brokaw-Eden Company."

By Mr. Hurd:

Q. Following this, Mr. Lynah, did you have an exchange of correspondence with Mr. Walter S. Carpenter regarding the incident?

A. There was a subsequent letter from Mr. Carpenter acknowledging that letter.

Q. I show you documents which have been marked General Motors Exhibits Nos. 143, 144 and 145 for identification, and ask you if those are letters passing between yourself and Mr. Carpenter regarding this incident?

A. They are.

Mr. Hurd: If the Court please, I offer General Motors Exhibits Nos. 143, 144 and 145.

The Court: They are admitted.

(Said documents so offered and received in evidence were marked Government's Exhibits Nos. 143, 144 and 145.)

[fol. 2571] By Mr. Hurd:

Q. Did that terminate this discussion?

A. It did.

Q. After leaving the du Pont Company in 1920, what employment did you have?

A. With one or two of my former du Pont associates, we organized a small company in New York known as the

L. & M. Distributing Corporation for the distribution of household appliances.

Q. How long did that continue?

A. That continued for about two years. I was not active in it for the full two years.

[fol. 2572] Q. What did you do after that?

A. I went into a partnership for the sale of cotton fabrics in New York City. That lasted about three months.

Q. Approximately when was that dissolved?

A. That terminated about July, 1922.

Q. Following that, what did you do?

A. Mr. John L. Pratt, who was assistant to Mr. Sloan of General Motors at that time, had been a director of our L&M Distributing Corporation. He had his headquarters in New York, and I went to see him about getting a production job in General Motors Corporation.

Q. The L&M Distributing Company, was this the small company which you had organized in 1920?

A. Yes.

Q. What was its business?

A. What was its business?

Q. Yes, the L&M Distributing Company.

A. Distributing household appliances.

How long had you known Mr. Pratt?

A. I had known Mr. Pratt since about 1906, or 1907, when we were both with the du Pont Company in Wilmington.

Q. When you went to see Mr. Pratt in the fall of 1922 about a production job with General Motors, did you have a discussion with him?

A. I did.

Q. Was anyone else present?

A. No, sir.

Q. What, in substance, was the discussion?

A. Well, as I recall it, Mr. Pratt mentioned that Mr. Sloan was considering employment of an assistant to Mr. Main, who was at that time director of the purchase section of General Motors; that he had a purchase plan that he was considering, and that I might be fitted into that plan.

Mr. Pratt knew of my former connection with the du Pont Purchasing Department, and the fact that during my employment with the du Pont Purchasing Depart-

ment I had been Chairman of the du Pont Committee on Standards.

Mr. Sloan was abroad at the time, and nothing transpired until he returned from his visit, sometime in September, I believe.

Q. Did you have a conference with Mr. Sloan upon his return?

A. I went to see Mr. Sloan.

Q. Where did you see him?

A. At his office.

Q. In what city?

A. On the corner of Broadway and 57th Street, in New York.

Q. Was anyone else present?

A. I do not recall that anyone else was present.

Q. What was your conversation with Mr. Sloan?

A. Mr. Sloan told me of the—I don't recall just how he described this plan—but it had to do with the setting up of purchase specifications and lumping the volume purchases of General Motors, and things of that character, and asked me to go to Detroit to call on Mr. Main, to discuss my qualifications with Mr. Main.

Q. Did he give you a letter of introduction to Mr. Main?

A. He gave me a letter of introduction to Mr. Main.

Q. I show you a document marked General Motors Exhibit No. 146 for identification, and ask you if that is the letter of introduction that he gave you.

A. It is.

Q. Did you have a conference with Mr. Main?

A. I did.

Q. Did you report back to Mr. Sloan after that?

A. I wrote Mr. Sloan that I had called on Mr. Main as requested by him, and stated that I felt that I could carry out the proposed work to his entire satisfaction.

Q. Did you receive a reply from Mr. Sloan?

[fol. 2574] A. I received an acknowledgment of my letter, saying that he would give the matter consideration.

Q. I show you documents marked General Motors Exhibits Nos. 147 and 148, respectively, and ask you if those are your letter to Mr. Sloan and his reply?

A. Yes, sir, they are.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibits Nos. 146, 147 and 148.

The Court: They are received.

(Said documents, so offered and received in evidence, were marked General Motors' Exhibits Nos. 146, 147 and 148, respectively.)

By Mr. Hurd:

Q. Were you employed subsequently or shortly after this by General Motors?

A. The 1st of October, 1922, I was employed as assistant director of the purchase section.

Q. In general, what were your duties?

A. At that time the work of the purchase section in making General Motors contracts in which all of the divisions might participate had not progressed very far. I was assigned to take up the matter of sending out questionnaires through the divisions on items that were picked at random, or suggested by any division who cared to make suggestions, and to analyze and compile the data on those questionnaires and consider the making of general contracts.

Q. At that time was there a Purchasing Committee in General Motors?

A. There was not.

Q. At the time you were employed, was there any mention of the creation of a Purchasing Committee?

A. None whatever.

[fol. 2575] Q. When did you first hear of the proposed Purchasing Committee?

A. Sometime later in that fall. Mr. John Pratt, who was then Mr. Sloan's assistant, and who came to Detroit every two weeks with the New York executives; lived with two old General Motors' friends and myself when he was in Detroit.

He told me about it informally during one of those visits that that was proposed. That was about in November, 1922.

Q. Did you become secretary of the Committee when it was created?

A. Yes.

Q. When did you first hear that you were to be secretary of the committee?

A. As I remember it, Mr. Hurd, it was when I got the

notice giving the membership of the committee on which I found my name as secretary. There had been nothing previously said to me about it that I recall.

Q. In mentioning the proposed committee to you, did Mr. Pratt tell you that the committee was to be an instrument for the carrying out of the wishes of the du Pont Company?

A. No, sir.

Q. Or anything similar to that?

A. No, sir.

Q. Did anyone ever tell you anything like that?

A. Certainly not.

Q. What, in general, were your duties as secretary of this committee when it was created in December, 1922?

A. Well, my duties were to prepare lists of items that the committee might consider as general contract possibilities for submission to meetings, to prepare programs of the meetings, and chiefly to implement the plan for the co-ordination of General Motors purchases which Mr. Sloan had [fol. 2576] prepared, and on the basis of which the General Purchasing Committee was formed; to keep the proposed plan for the coordination of the purchases up to date, and then to incorporate into it any changes that seemed logical as the work of the committee proceeded, and to particularly follow up the important matter of standardizing products, and the writing or developing of specifications to cover all of the various items purchased by the corporation.

Q. When you entered upon this activity, what was your state of mind with respect to the du Pont Company?

A. Well, naturally, Mr. Hurd, under the circumstances of my leaving the du Pont Company, I was greatly disappointed at first, and then very thoroughly disgusted with the treatment I had received. I had no feeling of enmity toward anybody, and of course, having been in the production end of the du Pont Company's business for nearly ten years, I appreciated the integrity that went into the products that they made. I appreciated not only the quality of their product, but also, because of my connection with the du Pont Company, and the work I had done, I had a very clear idea of the cost of production of all of the items that General Motors was buying from the du Pont Company, and I

proposed to capitalize on that information to the best interests of General Motors.

Q. Will you describe for us briefly, Mr. Lynah, the procedure that was followed by the Purchasing Committee in determining whether it would contract for the particular items, starting at the beginning; how did this subject come before the committee, and what were the steps?

A. Well, Mr. Hurd, anyone in the company, any employee of the corporation could suggest an item as a general contract possibility. A list of all such items would be presented at meetings of the General Purchasing Committee.

[fol. 2577] It would be considered by the Committee, and if it was decided to be worthwhile, a questionnaire, or the first step would be a questionnaire sent to all divisions of the corporation asking for their annual consumption of such items in terms of units and/or dollars; specifications under which they were purchased; the prices were being paid at that time, and the sources of the supply from which they got those items.

Upon receipt of the questionnaires, they were summarized, and the consolidated information, including all of the factors, was placed before the Committee.

If the Committee agreed that a savings could be effected by making a general contract, the next step was to reconcile the purchase specifications that were prepared on all the questionnaires, and to arrive, if possible, at a common specification that would be acceptable to all using divisions. Upon presentation of that information to the Committee, the divisions were notified that general contract proposals had been ordered developed upon a particular item and under such-and-such a specification, were told the names of the sources which were to be asked to bid, and were requested to name any other additional sources whom they would like to see invited to bid on the general contract.

The next step after that would be inviting suppliers, and we only invited suppliers to bid whose products and reliability of service and financial responsibility and so forth were such that we would be willing to place a contract with them, if their prices and terms were satisfactory.

After the bids were received and summarized, they were placed before the Committee, and the contract awarded to

[fol. 2578] the source or sources whom the Committee felt would be the best ones to serve us.

Then the only remaining step was to send a brief of every contract made, a brief giving all of the important terms of the purchasing contract. It was sent to each operating division, or in some cases, branches, sales branches if they were expected to participate in the contract.

Q: Mr. Lynah, I show you a document marked General Motors Exhibit 149 for identification, and ask you if that revision of the plan to September 21, 1923, was prepared by you?

A. Mr. Hurd, a great deal of the subject matter of this plan was in Mr. Sloan's original plan. There are paragraphs in here that were prepared by me based on the experience of the purchasing committee, from the time of its first meeting, until just before this revised plan was promulgated on September 1, 1923.

Q. Was it a part of your duty to keep the plan up to date?

A. It was a part of the original instructions for the secretary to keep the plan up to date.

Q. Was the issuance of this revision something you did pursuant to that duty?

A. Yes, sir.

Mr. Hurd: I offer in evidence General Motors Exhibit No. 149, if the Court please.

The Court: It is admitted.

(Said document so offered and received in evidence was marked General Motors Exhibit No. 149.)

By Mr. Hurd:

Q. Mr. Lynah, I would like to call your attention to the [fol. 2579] exhibits at the end of this document; first, Exhibit A, which is on the third page from the end. Was that the form of questionnaire you sent out in the event the committee thought of some item that they considered might be a possibility for a contract?

A. It was.

Q. That was sent to all purchasing agents?

A. ~~Of all~~ divisions of the corporation.

Q. Then I call your attention to Exhibit B, the next document. Is that the form of notification that you have referred to that was sent out in the event you decided to try to develop a contract?

A. It is.

Mr. Hurd: I call the Court's attention to the last three paragraphs:

"Please suggest any additional sources you desire to give preference, if any, for sources listed.

"Sources are being requested to bid on the following specifications."

And they set forth specifications. And then the last paragraph:

"Please advise these specifications are satisfactory and fully cover the matter and if not give any additional specifications."

Then the last page of the document, Mr. Lynah, marked Exhibit C, is that the form of the contract brief that was issued after the committee entered into a contract?

By the Witness:

A. It is.

[fol. 2580] By Mr. Hurd:

Q. That went to all purchasing agents?

A. Of all divisions.

Mr. Hurd: I call the Court's attention to the last paragraph, to the writing:

"Your participation in this contract is required unless specifically excepted by the General Purchasing Committee."

By Mr. Hurd:

Q. Mr. Lynah, how did the committee operate, by majority vote or unanimous vote?

A. Mr. Hurd, the important thing of all of this work was teamwork, and when the committee dealt with a question,

unless we could argue it out among ourselves, and arrive at a unanimous decision in the best interests of the corporation, we could hardly expect those divisions that were expected or required to participate in these contracts to play on the team with us. So that I can say that all of our decisions were unanimous. We never left a subject until they were.

Q. Were there divisions of the corporation covered by the contracts which were not represented on the committee?

A. Quite a number of them.

Q. Were they consulted before a contract was made?

A. In the case of important items, yes, sir, but it was long after the committee began to operate before we won the confidence of our outlying divisions that were not represented, by or through contacts by visits and other means of convincing them what the committee was trying to do was in the best interests of the corporation.

[fol. 2581] Q. Did you compel divisions to buy under your contracts against their will?

A. They were required to participate in the contract, as it says here, unless they were specifically exempted.

Q. And were there any cases where a division, wishing to be exempted, was refused exemption and was later required or compelled to buy under the contract?

A. Not that I recall.

Q. If a particular division objected to buying under the contract, what was your procedure? What did you do about it?

A. Well, the procedure would be taken up with the general manager of that division, if necessary, and either through meetings or other means the difficulties ironed out.

There were many cases where divisions were exempted from participation in the contracts. For instance, we had a division further east in Bristol, Connecticut, and we made contracts for metal cleaners where the manufacturer was in Detroit, for instance, and it might be obviously much cheaper for that division to buy its metal cleaners from some eastern source that did not have a contract, because there wasn't enough volume of business down east to warrant a contract.

In that case he would be excepted from participation.

Q. In the original procedure outlined by the plans, I believe there were two steps you have not mentioned.

At one time did you follow the practice of asking the various divisions to develop contracts before the committees tried to develop contracts?

A. That was part of the original procedure.

Q. What happened to that?

A. That was done because some of the large divisions [fol. 2582] felt that they could get just as good or better terms—that means prices—because of their individual volume than the Purchasing Committee could on the whole corporation's volume.

So that they were given an opportunity to do that, and it didn't work out that way particularly, and the time element involved in their developing their own contract proposals was such as to postpone, you might say, the development of general contracts, so that was dropped.

Q. Was that early in the proceedings?

A. That was early in the procedure, and the other item that was tried and dropped, it was felt that interchange of price information between divisions might be very helpful to the purchasing agents of the individual divisions.

Well, shortly after the Purchasing Committee began to function the suppliers made pretty much the same offers to all of our divisions, so that the need for that procedure was not borne out.

Q. Now, do you recall that after the committee had operated for a time some additional representatives were added to the committee?

A. Yes.

Q. When was that?

A. Well, we had, the original committee, the purchasing agents of Cadillac, Chevrolet and Buick were the car division representatives.

As the work of the committee progressed it became quite evident that the large volume of purchases to be made were by the car divisions and as we only had two other car divisions, Oakland and Olds, it was thought advisable and helpful to add the purchasing agents of those divisions to the committee.

Q. And were they added?

A. They were added.

[fol. 2583] Q. That is, representatives from Olds and Oakland were added.

Did you lose any of the old members?

A. Well, I think the member from Bristol, Connecticut, was withdrawn because of the requirements of their work, particularly their raw materials, were not of interest to other operating divisions.

Q. Was that an accessory division?

A. That was an accessory division.

Q. About when was this change made, adding representatives of Olds and Oakland?

A. I think that took place in the fall of 1923.

Q. About the same time, did you create a sub-committee?

A. Yes, sir, we did.

Q. And just what was the sub-committee?

A. Well, we found that the volume of work that was coming before the committee was such that to deal with it by the full committee—well, we just didn't have time to do it, and the purchasing agents of the three larger car divisions seemed to have the confidence of all the other car groups and were the largest purchasers of all classes of material and were easily available to Detroit—two of them were in Detroit, and one was in Flint, Michigan—the logical thing seemed to be to organize a sub-committee of the General Purchasing Committee to handle any matters that might be dealt with by the big committee, the full committee, except policy.

Q. What was this committee called?

A. The Committee was called the Standing Sub-Committee, and they had the authority, full authority, to act for the Committee with the understanding that the proceedings of [fol. 2584] all of their meetings be reported and approved by the next following meeting of the General Purchasing Committee.

Q. At whose suggestion was this Standing Sub-Committee created?

A. That was my suggestion.

Q. Mr. Lynah, I show you a document marked General Motors Exhibit 150 for identification, and ask you if that sets forth the minutes authorizing these two changes that you have just described; the addition of the Olds and Oak-

land representatives; and the creation of the Sub-Committee?

A. It does.

Mr. Hurd: If the Court please, I offer into evidence General Motors Exhibit No. 150.

The Court: It is admitted.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 150.)

By Mr. Hurd:

Q. Now, Mr. Lynak, at the time that the Committee started operating in December, 1922, were there any contracts in existence covering General Motors generally, the requirements of all the divisions?

A. Yes, there were a few contracts, Mr. Hurd.

Q. Do you recall any of them?

A. Well, I recall the principal one, which was with the A. O. Smith Corporation of Milwaukee for frames.

I believe there was one with the Burroughs Adding Machine Company of Detroit; one for carbonizing boxes; one for carriage bolts; and fuses.

That is about as far as I can go, I think.

Q. To refresh your recollection, was there one on coal?

A. Yes, one for coal.

[fol. 2585] Q. Now, turning to the work of the Committee, what type of items did you cover by contract in general categories?

A. Of course, the large volume of purchases, where the money for purchases was spent, was in what we call productive materials, and that is the material that enters into the final product.

Those were also the materials that it was rather difficult to have generally adopted, at least, to develop specifications for generally, because of variations by the different manufacturing divisions.

So our efforts were at first, pending the development of specifications of these other items, what we called expense materials or operating supplies that did not enter into the products.

I think—well, that's that.

Q. The expense materials were generally common to all the divisions?

A. Yes.

Q. What about the productive materials? Were they common to all divisions?

A. Well, certain types of productive materials were. All car divisions used frames. The chemical analysis of the steel used in car frames was the same.

In other parts of the car, the springs, for instance, or parts of the engine, and whatnot, had different analyses of steel. We took up those things for which there was already in existence a common specification or for which a common specification could be more easily developed.

Q. Now, when you started in with your work with the Committee, did you make any study of possible subjects for consideration by the Committee, possible items?

A. I did. And it was pretty generally known what the large volume items were. I sent out questionnaires to all the [fol. 2586] divisions, listing these items, and asking for their annual consumption in terms of dollars.

As I recall it, there were some thirty-two items on that list, with an aggregate cost of \$138,000,000.00.

Q. What did you do with the list after you compiled it?

A. The list was sent to Mr. Sloan and presented at the next meeting of the General Purchasing Committee.

Q. Did the General Purchasing Committee from time to time consider the items on your list?

A. Well, immediately it was determined that some of the items were peculiar to each manufacturing division and were discarded for the time-being. There were others that were considered general contract possibilities and were dealt with accordingly.

Q. I show you a document marked General Motors Exhibit 151 for identification. Will you refer to the back side of that, and tell us whether or not that is a list of thirty-two items that you compiled?

A. Yes, sir, that is the list.

Q. Is the front page your communication to Mr. Sloan regarding the list?

A. It is.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit 151.

The Court: It is admitted.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 151.)

By Mr. Hurd:

Q. I would like to call the Court's attention to three items in the list. It appears on the back side of a letter, a little more than half way down in the first column, the word "Leather-Im."

[fol. 2587] What does that refer to?

A. That is imitation leather. The du Pont Company's product was Fabrikoid. Each manufacturer of that commodity had a different trade name for it.

Q. The du Pont Company did make imitation leather at that time?

A. It did.

Q. Then tracing that across the page—it is rather difficult—but the total dollar item at the end is 1,243-odd thousand dollars.

That was the amount that the corporation as a whole had paid out for imitation leather during the calendar year 1922?

A. Yes, sir.

Q. Then about half the distance from there to the bottom of the page, the item "Top fabrics."

Were top fabrics made by the du Pont Company at that time?

A. Yes, sir.

Q. Tracing that across the page, the dollar item in the last column is 2,266-odd thousand dollars.

Then the last item in the original column is "Paints-Color."

At that time the du Pont Company was engaging in the manufacture of paints?

A. They were.

Mr. Hurd: Then, Your Honor, you will see that in the last column that amount is \$1,300,000.00.

By Mr. Hurd:

Q. Mr. Lynah, you have referred to the fact that the specifications that came in answer to the questionnaires

might differ on the product. What did you do in those situations?

A. Mr. Hurd, we had at that time on the Advisory Staff in Detroit a section known as the factory section. On the [fol. 2588] staff of that section were some production experts, men who were familiar with all phases of the manufacturing operations in an automobile plant. The specifications were referred to them for simplifying or unifying or improving, or whatever needed to be done.

We also had in the research laboratories in Dayton, Ohio, a staff of highly expert chemists who could deal with the metallurgical and chemical type of specification.

So that whenever any reconciling of specifications became necessary or evident, they were referred to one or more of those sections.

Now, later on, we found it desirable to organize a great number of subcommittees and committees to deal with the preparation and simplification of specifications.

For instance, we had the metallurgical subcommittee. We had the paint and enamel committee. We had a committee on foundry practice. We had a safety engineering committee. We had a works engineers committee. We had a power and maintenance committee.

We had committees that dealt with every phase of manufacturing operations. So that the divisions themselves who were represented on these committees could have a direct say in the preparation of specifications, which finally came back to the purchasing committee for submission to the divisions in an official form for approval.

Q. When the particular committee handling the problem of standardizing any particular item reached a standard, it notified the General Purchasing Committee of its results?

A. Yes. Their results were reported.

Q. Then what did you do with the report?

A. The General Purchasing Committee, after reviewing the recommended specifications, would submit them to the [fol. 2589] divisions through the purchasing agent for approval by that department of the division that would use those specifications on their purchase requisitions.

There was just one other step in there that I might mention, too. There was no use in developing a specification

that wouldn't be found perfectly practical by the manufacturer who was going to be called on to produce the material under that specification.

So that wherever it was considered desirable, we submitted the proposed specification to the manufacturers who would be expected to supply materials under those specifications for their approval as to the practicability of the specifications.

After all that was done, then the specifications were ordered printed and put in the General Motors standards book.

Q. In the event that a division objected to the specification, what happened?

A. The usual effort was made to reconcile it. If the majority of divisions approved a specification, it went into the standards books anyhow, and sooner or later the division that originally objected would find it desirable to use it.

Q. If the standards specification went into the standards book, were the divisions required to follow that standard?

A. No, that was up to their engineering departments, but the approval of the specifications had gone through so many channels that as a rule it was generally accepted.

Q. To what extent was this work of standardization an activity of the Purchasing Committee?

A. It became one of the very important activities of the General Purchasing Committee. As I say, we had every [fol. 2590] phase of manufacture working on it—a man in every phase of manufacture working on it.

Q. Did the committee, the General Purchasing Committee, work out procedures for effecting standardization?

A. Yes, sir.

Q. Mr. Lynah, I show you a document marked General Motors Exhibit No. 152 for identification, and ask you if that contains selections from the plans and minutes setting forth procedures and policies on standardization and dealing with the importance of it?

A. Yes, sir.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 152.

The Witness: May I interrupt for one moment? On this question of specification and standardization, I would like to cite just one thing.

In 1923 before this work started, the Cadillac Motor Car Company used bolts, nuts, set screws and top screws, all of which have special threads, so that if anybody having a Cadillac car down in some isolated section of the country—and it didn't have to be too isolated—happened to have one of those bolts or set screws or what-not break, he would probably have to lay up there until he could get a replacement from the nearest Cadillac branch or even back from the factory.

That was just one of the items of difficulty that we had to overcome in this process of standardization.

Q. That was due to the fact that Cadillac had its peculiar type of thread?

A. That was.

Mr. Hurd: If the Court please, I offer General Motors Exhibit No. 152.

[fol. 2591] The Court: It is admitted.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 152.)

Mr. Harsha: Your Honor, may I be heard very briefly on these?

The Court: Yes.

Mr. Harsha: We are not objecting to their admission at this time, but you will note that these are excerpts from minutes which cover a considerable period of time.

Counsel for General Motors has provided us with a photostatic copy of the complete minutes, but we have not yet had an opportunity to check through completely. I wonder if we could have a reservation that if there is any other portion we feel is relevant, we can offer it later?

The Court: The Court will reserve its ruling for the present.

Mr. Hurd: Would it be agreeable that they be received subject to correction, if there is any error in them?

Mr. Harsha: Oh, surely.

Mr. Hurd: This is one of the things we are liable to lose track of. That is all I have in mind. If that is agreeable?

Mr. Harsha: Certainly. We have no objection to that.

The Court: They will be received subject to correction.

Mr. Hurd: There — a number of these, and that is agreeable to us if that applies to all of them.

[fols. 2592-2593] Mr. Harsha: Maybe I didn't make myself clear.

We also have the point that in addition to any corrections, there may be other portions of the full minute that we feel are relevant.

Mr. Hurd: We have no objection to the introduction of any additional portions or whole part of any or all of them.

The Court: Very well.

The court now stands recessed for fifteen minutes.

(Recess taken.)

Mr. Hurd: With respect to General Motors Exhibit 152 I would like to call the Court's attention to the fact that this subject of standardization is dealt with on the first page, and quotations from the plan itself that contemplated that problem.

On the succeeding pages, it was dealt with at various times, particularly in 1923 and 1924, and also in some later years, in setting forth the procedures it followed in carrying out the standardization program.

By Mr. Hurd:

Q. Mr. Lynah, I show you a document which is marked General Motors Exhibit 153 for identification, and ask you if that contains a summary of the illustrations of the activity of the Committee in standardizing these various products?

A. Yes, sir.

Mr. Hurd: I offer in evidence General Motors Exhibit No. 153.

The Court: It is admitted.

[fol. 2594] By Mr. Hurd:

Q. Mr. Lynah, was the Committee of Body Trimming Engineers formed at this time?

A. Yes.

Q. Is that procedure typical of the way you proceeded in an effort to standardize materials?

A. It was.

Q. Having committees for that purpose?

A. It was.

Mr. Hurd: Now, on page 14, at the top of the page, "Battery Terminal Standardization."

"Ground connections made of laminated copper strip have been adopted by all divisions except Buick at an indicated saving of \$15,000.00 per annum. Buick have found certain reasonable objections to the use of this connection. It is hoped that their objections may be overcome as there is an indicated saving to Buick of \$12,000.00 per year."

By Mr. Hurd:

Q. Was that the general procedure you followed to induce any objecting divisions to accept standardization?

A. It was.

Mr. Hurd: The next item, the Court will notice, "Specifications for Approval for Insertion in Standards Books." [fol. 2595] "(a) Aluminum Sheet & Strip.

(b) Aluminum Rod and Wire.

(c) Alloy Tubing.

(d) Phosphor Bronze Sheet & Strip.

(e) Babbitt."

By Mr. Hurd:

Q. Those were all items where there had been specifications and some committee had worked out a standard specification?

A. Correct.

Mr. Hurd: Turning over to page 21, the Court will note that the first three items are all specifications of various types that have been approved for insertion in the Standards Books.

By Mr. Hurd:

Q. Does that mean that it had been approved by all the divisions using the particular items, when they were approved for insertion in the Standards Books?

A. They had to be approved by the majority of the using divisions.

Mr. Hurd: Page 23, the whole page is an illustration of the items that have been approved for insertion in the Standards Books. The same is true of page 24. It is a solid list of items. Also all of 25, and it is also true of 26, 27, and 28.

I won't bother to read any of the particular provisions, but the majority of this document thirty pages long, contains item after item that was standardized?

A. Yes.

Q. Mr. Lynah, now I show you a document marked Gen-[fol. 2596] eral Motors Exhibit 154 for identification. Does this contain a list of the contracts that were entered into by the General Purchasing Committee or the Sub-Committee with the approval of the Purchasing Committee?

A. It does.

Mr. Hurd: I offer in evidence General Motors Exhibit 154.

The Court: It is received.

(Said document so offered and received in evidence was marked General Motors Exhibit No. 154.)

By Mr. Hurd:

Q. Mr. Lynah, I notice that some of the items are underlined in red. What does that signify?

A. That signifies contracts that were made with the du Pont Company.

Q. I notice some items are underlined in green. What does that signify?

A. That signifies contracts for items of competitors of the du Pont Company.

Mr. Hurd: Now, I would like to explain to the Court briefly the setup of the chart. The first column is an arbitrary listing of the items in the order that the contracts were approved. It is a listing of the contracts.

For instance, No. 1 is the first contract authorized by the Committee; No. 2 is the second contract, and so forth.

In the second column, under the heading, "Meeting Number", that refers to the meeting at which the action was taken.

All of the minutes were numbered, as I recall, and it merely identifies that particular meeting.

The third column shows which committee it was. GPC [fol. 2597] is the General Purchasing Committee, and SSC is the Standard Sub-Committee.

The fourth column shows the date that the action was taken.

The fifth column, the product that was covered by the contract.

The sixth column, the supplier with whom the contract was made.

The seventh column is headed Portion of Requirements.

Now, the minutes showed that the contract, for example, with the Carnegie-Steel Company was for seventy percent of the total demand for carbon steel bars. That information is set forth.

Nothing is shown—the minutes do not show whether there was a definite portion or not—if the letters REQ appear in that column, that means it covers the full requirements of the using division.

If the letters ROSM appear in that column, that means that the contract covered General Motors requirements of the seller's make.

By Mr. Hurd:

Q. Mr. Lynah, will you explain what you mean by the term "Requirements of Seller's Make?"

A. Each manufacturer in any particular field had his own brand name of product, or its product was known under the name of the manufacturer. The requirements of seller's make meant our requirements of that make of equipment or commodity, or product of that particular manufacturer.

Q. Does a contract for the requirements of the seller's make require anyone to buy any item from that manufacturer?

A. No, it does not, but if the terms of the contract were [fol. 2598] favorable, even though the division may have been using some other manufacturer's make of a similar item, that is without a requirement of his participation; it might very readily be an inducement for him to participate in that type of contract, and that was frequently the case.

Mr. Hurd: Now, the next column, "Kind of Discount"; and if it appeared from the minutes as to what the discount was, it was inserted there. There were generally two types of quantity discount, which may be a sliding scale quantity discount or a straight quantity discount. If it was a discount covering all items that a company might sell, it has been marked MP in that column. That refers to Multiple Item.

By Mr. Hurd:

Q. Will you explain briefly just what multiple item contracts were, Mr. Lynah?

A. Well, a manufacturer would make a different product, or would have a line of products of many different specifications. We might buy from him a certain volume of one specification and a certain volume of another specification where the prices of those items were not related in any way, but in order to capitalize on the volumes of the business that we might place with him, he could be induced to lump all of these items which he might supply and give us a base price on each item plus a multiple item discount.

Mr. Hurd: The column headed "Participation" refers to any division that was included, if it appears in the minutes, that some division was participating in the contract.

Of course, the last column, "Terms of Contract" merely [fol. 2599] shows whether it was six months, a year, three months or some other term, or a renewal of the past contract.

By Mr. Hurd:

Q. Mr. Lynah, will you turn to page 13?

A. Yes, sir.

Q. The item there, Pyroxylin Finishes, E. I. du Pont. Was that the first contract made with the du Pont Company through the General Purchasing Committee?

A. Yes, sir, it was.

Q. How long had the committee been in existence before this contract was entered into?

A. A little over two years.

Q. How many contracts had the committee made before making this contract?

A. 147.

The Court: You mean for the same product, or contract generally?

Mr. Hurd: For contracts generally?

The Witness: For contracts generally, sir.

By Mr. Hurd:

Q. The committee had entered into 147 contracts for various items before entering into any contracts with the du Pont Company?

A.- Correct.

Q. And it had been in existence and operating for over two years before it entered into any contract with the du Pont Company?

A. Correct.

Q. Now, will you turn to page 18, the item at the top of the page, Pyroxylin Finishes with the du Pont Company. Was that the second contract made with the du Pont Company by the General Purchasing Committee?

A. Yes, sir.

Q. How long had you been operating at that point?

A. A little over two years and a half.

[fol. 2600] Q. How many contracts had you made before you made the second one with du Pont?

A. 197.

Q. Now, turn to the next page, on page 21.

A. Yes, sir.

Q. Item 240, "White Lead in Oil - Dry White Lead"; National Lead Co., was that a product then made by the du Pont Company?

A. Yes, sir.

Q. And was the National Lead Company a competitor of the du Pont Company at that time?

A. It was on that product.

Q. And the next item, right below that, "Paint & Varnish Type Materials", the supplier the du Pont Company, under "Portion of Requirements" is "ROSM." That was one of those contracts specifying requirements of seller's make?

A. It was.

Q. It did not require the purchase of any item under the contract?

A. Correct.

Mr. Harsha: Pardon me, Mr. Hurd. Am I on the wrong page? Are you on page 21?

Mr. Hurd: Yes page 21.

Mr. Harsha: The copy I have shows "du Pont Req."

Mr. Hurd: That is not the corrected copy.

What does your Honor have on yours?

The Court: "ROSM" on mine.

Mr. Hurd: That was an error in the original printing, and you have a copy that didn't get corrected, Mr. Harsha. That was an error that we found.

By Mr. Hurd:

Q. The item right below that is "Pyroxylin Finishes, [fol. 2601] Duco & Duco Thinner" and that was for 100 per cent of the requirements of the General Motors division, and 50 per cent of Fisher Body Company?

A. That is correct.

Mr. Hurd, I would like to point out in connection with that, at that time the trend towards closed cars which had been very rapid, put the consumption of Pyroxylin finishes on Duco and Duco thinner by the Fisher Body Corporation quite substantially above that of the General Motors units.

Now, in the purchase of paints where the matching of colors from one shipment to another is of the greatest importance, it was not advisable to have our divisions which used a decreasing amount of such finishes, have colors from different sources coming into the plants. That was one of the influences that tended towards the increase in the percentage of paints placed with any one supplier.

Q. Now, will you turn to the item at the bottom of page 23, "White Lead in Oil - Dry White Lead, Carter White Lead Co."

Was the Carter White Lead Company a competitor of du Pont with respect to that product at that time?

A. It was.

Q. Will you turn the page again and look at page 25, Item 296. Just what is that item? Explain that.

A. Well, that item meant anything that our divisions would buy or specify from the du Pont Company, or buy from the du Pont Company which might include any arti-

ficial leather or Duco, Duco thinner, or any other items that the du Pont Company might supply.

Q. Was that a contract that required you to purchase anything?

A. No, that was one of the requirements of seller's make, [fol. 2602] contracts in which participation was optional with the divisions.

Q. Will you turn to the next page at the bottom of the page, Items 312 and 313, and one is Pyroxylin Finishes and Thinner, and the other Paint & Varnish Type Materials. Those are both marked "ROSM," and those were both just requirements of the seller's make?

A. Yes.

Q. And the next page, National Lead Company, underlined in green, that was still a competitor of du Pont Company at that time?

A. It was.

Q. And the following page, page 25—no, page 28, Item 333 underlined in green, Duco Thinner, U. S. Industrial Alcohol Sales Co., was that a competitor of the du Pont Company with that product at that time?

A. It was.

Q. And turn the page again to page 30, Item 355, Thinner, E. I. du Pont, 60 per cent. Does that refer to 60 per cent of the requirements of the General Motors Corporation?

A. Sixty per cent of the requirements, yes.

Q. Turn two sheets now to page 34.

The Court: Pardon me. I notice the number of contracts for goggles. What are all of those goggles used for? I notice they are for goggles. What are all those goggles and head masks—what are those used for?

The Witness: In the operations, sir, where the workmen are exposed to steel particles.

The Court: And torches and things?

The Witness: Yes, torches and foundry work and operations of that nature.

The Court: I thought that was in the days of the open cars where they used to wear goggles.

[fol. 2603] Mr. Hurd: And also in painting.

The Witness: Yes, spray painting.

Mr. Hurd: On page 34, the second item, was that also a du Pont competitor?

By the Witness:

A. Correct.

By Mr. Hurd:

Q. And the next page, page 35, the two items were du Pont, those are both requirements of seller's make?

A. Correct.

Q. And turn to page 37, a further contract with National Lead Company—still a competitor?

A. Correct.

Q. Turn two pages to page 41, the two items underlined in green; the first one is another one of National Lead, and the one at the bottom, Caustic Soda, Detroit Soda Products Co.—was that a competitor on that product of the du Pont Company?

A. It was.

Q. Will you turn to the top of the next page, page 42, the first item underlined in green, Cyanide-Sodium-Copper, Charles Hardy, Inc., was that a competitor of the du Pont Company as to that product at that time?

A. It was.

Q. And that was another contract. That was requirements of the seller's make?

A. Correct.

Q. And the following page, page 43 is another contract with National Lead.

Turn to page 44, the first item underlined in green, Aluminum Bronze Powder, Aluminum Company of America, was that a competitor of the du Pont Company with respect to [fol. 2604] that product at that time?

A. I am sure it was at that time.

Q. The next item, Aluminum Spar Mixing Liquid, was that a competitor of the du Pont Company?

A. It was.

Q. Later on there are two more contracts, one with National Lead and one with Detroit Soda Products, and also one on page 45 with Detroit Soda Products Company.

Page 47, another contract with du Pont. Were those requirements of seller's make?

A. Correct.

Q. And another one with National Lead, and below that, Trisodium Phosphate, Detroit Soda Products Company.

Is that a competitor of du Pont as to that product?

A. It was.

Q. The next page, on the next page there is another contract, Cyanide-Sodium, the Charles Hardy, Inc., and then at the bottom of the page is Caustic Soda, Dow Chemical Company. Was that a competitor of du Pont as to that product at that time?

A. It was.

Q. At page 49, the item "Carburizing Compounds, Steel Treating Equipment Company," is it a competitor of du Pont for that product?

A. I believe it was.

Q. There is another contract to Detroit Soda Products Company, on that page.

A. That is right.

Q. Page 50, there is one with National Lead Company. There is also one on page 50 for "Chromic Acid, Mutual Chemical Company." Was it a competitor of du Pont at that time?

A. On that item, yes.

Q. At the bottom of that page 50, toward the bottom, is Item 648, "Anti-Freeze Methanol, Western Rosin & Turpentine Company." That is underlined in red.

[fol. 2605] Do you recall whether that was a distributor of du Pont at that time?

A. That is my understanding, it was.

Mr. Hurd: That particular item, if the Court please, while du Pont does not appear, it was a distributor, so it has been included as a purchase from the du Pont Company.

By Mr. Hurd:

Q. At the bottom of page 51 is another contract with Industrial Chemical Company.

A. Right.

Q. Page 52, "Pyroxylin Finishes," with du Pont. That was a requirement of seller's make?

A. Correct.

Q. And contract with National Lead and Charles Hardy.

Page 53, contracts with Dow Chemical and Detroit Soda, similar to the prior ones.

On the last page, 54, contracts with National Lead and Mutual Chemical Company, similar to the prior ones.

Those companies were still competitors with du Pont on those products at that time?

A. They were.

Q. Mr. Lynah, do you recall how many contracts there were that the committee entered into with the du Pont Company?

A. According to this chart, which I am sure is correct, there were 14 du Pont contracts, or contracts with the du Pont Company, during this period.

Q. That is, out of a total of 709 that were made?

A. Out of a total of 709.

Q. How many contracts with competitors of du Pont?

A. 30.

The Court: What period does this cover?

[fol. 2606] Mr. Hurd: This covers the period from January, 1923 until the committee ended in August, 1931, if the Court please. This is the full life of the committee.

By Mr. Hurd:

Q. Now, Mr. Lynah, were there any extensive rejections of items for contracting?

A. There were.

Q. I show you a document marked General Motors Exhibit No. 155 for identification.

Does that contain a list of the items with respect to which the Committee decided not to enter into contracts?

A. It does.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit 155.

The Court: It is received.

(Said document so offered and received in evidence was marked General Motors Exhibit No. 155.)

By Mr. Hurd:

Q. Mr. Lynah, I notice some items are underlined in red on this document. What does that indicate?

A. That indicates that the materials for which contract proposals had been made and rejected covered materials that could be supplied by the du Pont Company.

Q. That is, they were available at the time from the du Pont Company?

A. They were available at the time from the du Pont Company.

Mr. Hurd: I would like to explain the chart briefly to the court.

As far as the first four columns are concerned, it is [fol. 2607] similar to the first chart and is keyed to the particular meeting where the subject came up and where the contract was rejected.

The fifth column shows the product.

The sixth column shows the supplier, if the rejection was directed to a particular supplier. If it was directed to the subject, and they were not going to contract at all for the subject, then nothing appears in the supplier column.

If the minutes showed a specific reason for the rejection, it appears in the last column under remarks. If the item is "Too Special," it appears there. If there was "No Saving," it so appears, and so on.

By Mr. Hurd:

Q. Mr. Lynah, what is meant by "Too Special?"

A. It meant that the item was one that was required by a division for particular purposes. It was not subject to coordination or lumping of volume.

Q. I call your attention to the chart, Mr. Lynah, the first page, fourth item, which is underlined, Pyralin.

Was that made by the du Pont Company at that time?

A. It was.

Q. What is Pyralin?

A. Pyralin is really celluloid. That is the ordinary trade name for it, celluloid. It was used by the car divisions for windows in the back curtains and side curtains of open cars.

Q. Turning to page 3, item 51, "Leather substitute and rubber coated fabrics."

Those were items that you listed in your thirty-two items as possibilities, are they not?

A. Yes, sir.

[fol. 2608] Q. In the last column, the comment "Cost plus unsatisfactory." Do you recall what the circumstances were of that particular incident?

A. Yes, sir. Items that were purchased in large volume where the manufactured article was composed of raw materials of several kinds—in this particular instance, the base of all artificial leather is cotton fabrics. There were times when it was considered more favorable to buy cotton fabrics than other times.

To carry that a step further, it was considered possible to effect substantial savings by buying the raw cotton and paying the cotton mills a conversion charge to convert that raw cotton into different types of fabrics.

Of course, in the artificial leather business we used a great many types of fabrics.

The idea in the submission of this contract was that the du Pont Company would contract for a substantial amount of cotton fabrics when that market was favorable, and we would pay a conversion charge to have the material dyed and coated with the particular amount of pyroxylin coating required for the different qualities, so called, of artificial leather.

Q. Did this particular incident that occurred in September, 1923, relate to a proposed contract with the du Pont Company?

A. That is my recollection of it.

Q. And it was rejected by the purchasing committee?

A. Yes, sir, because it was too speculative.

Q. Referring to page 5, item 81, photographic supplies, were they available at that time from the du Pont Company?

A. I believe so.

Q. Referring to page 7, two items are underlined. The top item is acid-sulphuric 66 percent, and then further down another item, acid. Were those available from the du Pont Company at that time?

A. They were.

[fol. 2609] Q. Turning to page 9, two items are underlined. One is "Paints for Nonproductive and Maintenance Use."

Were they available from du Pont at that time?

A. They were.

Q. Is that also true of "Floor Paints" appearing right below that?

A. They were, correct.

Q. Then the next page, page 10, item 153, "Striping Materials and Thinners," were they available from the du Pont Company at that time?

A. Correct.

Q. The next page, "Denatured Alcohol," was that available from the du Pont Company?

A. Correct.

Q. Turning to page 13, "Machinery Enamels," was this available from the du Pont Company?

A. Correct.

Q. Further on, on that page, "Anti-Freeze Materials," was that available from the du Pont Company?

A. Correct.

Q. Then turning two sheets, item 247, "Varnish and Oil Type Materials," the next column, "E. I. du Pont de Nemours Company," was that rejection specifically related to a proposal made by the du Pont Company?

A. The item rejected meant a contract proposal rejected, and the fact that the du Pont Company's name appears there meant that their proposal had been rejected.

Q. Turning to the next page, item underlined, "Aluminum Spar Mixing Liquid," was that available from the du Pont Company?

A. Correct.

Q. Then the last page, "Anti-Freeze Methanol," with the du Pont name, does that mean that the contract under consideration was rejected, a proposed contract with the du Pont Company?

A. Correct.

Q. Of the total of 342 rejections, do you recall how many [fol. 2610] of these were proposed contracts with the du Pont Company?

A. 13.

Q. Contracts with the du Pont, or for a material that they could supply?

A. A material that they could have furnished, yes, sir.

Q. I would like to turn briefly to the general rules, the general test that you used for determining whether to make a contract.

Did you have any requirement as to the number of divisions that would be interested in the product?

A. No general contract development was undertaken unless the item involved was used by more than two divisions.

Q. What was the purpose of that rule?

A. The purpose of the rule was that unless we could add to the volume of one division in getting better prices, that that division by itself could get just as favorable terms as the General Purchasing Committee could get.

Q. Did you have any rule with respect to having the product involve any particular volume before you would contract for it?

A. There had to be a substantial saving.

Q. There had to be a substantial saving resulting from your contract?

A. Yes, resulting from the contract.

Q. Did you have any rule with respect to the number of sources of supply?

A. There was no official rule, but on the old-fashioned thesis of not putting all of your eggs in one basket, it was just sound practice to have more than one source of supply familiar with your requirements and conversant with the specifications under which you purchased.

Further, in order to encourage competition, and to keep [fol. 2611] abreast of developments by other potential suppliers, it was desirable as a general thing to have more than one source of supply.

Q. Did you have any general rule with respect to keeping the prices that you obtained confidential or secret?

A. That was a thing that we worked on constantly all through the life of the General Purchasing Committee, to keep prices confidential. We had to send out these contract briefs with the terms of purchase, including prices, to the Purchasing Department of all of our operating divisions.

The Purchasing Departments in some of those divisions had very large personnel. They had different buyers for many different classifications and products.

These contract briefs, or copies of them, had to be in the hands of those buyers, at least the terms of the contract, and it was a perfectly natural thing—it seemed to be, at least—that suppliers of similar products, not holding the contract, would keep contact with the divisions in an effort

to get business, and in the course of some of those private negotiations the contract prices would be disclosed.

Our effort was to keep the contract prices confidential because our volume of purchases frequently enabled us to get better prices than concerns requiring smaller volumes might get. In those days, things were "cheaper by the dozen."

Q. With respect to savings, you said you would not contract for an item unless there was a saving resulting from it.

I show you a document that is marked General Motors Exhibit No. 156 for identification, and ask you if that contains typical illustrations of contracts producing savings?

A. Yes, sir, it does.

[fols. 2612-2613] Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 156.

The Court: It is received.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 156.)

[fol. 2614] By Mr. Hurd:

Q. Mr. Lynah, did the Committee make any effort to review its accomplishments from time to time in saving money through its contracts?

A. Well, the existence of the Committee, the reason for its existence was the savings that it could effect in the coordination of General Motors purchases.

It was necessary, to justify their existence, to review their achievements from time to time, and show savings by the use of a formula that had been approved by the purchasing agents of all divisions, and when they approve a formula it is pretty well bedrock. That was done annually.

Q. I show you a document that has been marked General Motors Exhibit No. 157 for identification.

Will you look at the first page of that and tell me whether [fol. 2615] or not that sets forth the formula that you worked out for determining what your savings were?

A. It does.

Q. Then will you look at pages 2 and 3. Do those con-

tain references to the amount of savings that the Committee had accomplished?

A. Yes.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 157.

The Court: It is admitted.

(Said document so offered and received in evidence was marked General Motors Exhibit No. 157.)

[fols. 2616-2617] Adjournment.

[fol. 2618] JAMES LYNNAH, called as a witness on behalf of the defendants, having been previously duly sworn, resumed the stand and testified further as follows:

Direct examination (continued).

• By Mr. Hurd:

Q. Mr. Lynnah, you explained yesterday the position of the General Purchasing Committee with respect to having more than one source of supply.

I now show you a document marked General Motors Exhibit No. 158 for identification, and ask you if that contains the rulings of the Purchasing Committee with respect to that subject?

A. It does, sir.

Mr. Hurd: I offer in evidence, if the Court please, General Motors Exhibit No. 158.

The Court: It is received.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 158.)

Mr. Hurd: I would like to call attention to the second item on this exhibit, headed "General Purchasing Committee Minutes, January 2, 1924," under "Miscellaneous Matters":

"For the purpose of enabling Divisions to keep in touch with sources of supply and to be in a position to feel out the market at any time and to encourage best

"possible service on part of contractor it was agreed that as regular procedure general contracts would read to cover not more than 80% of General Motors requirements of any item."

[fol. 2619] By Mr. Hurd:

Q. Mr. Lynah, at that time had the Purchasing Committee made any contract with the du Pont Company?

A. No, sir.

Q. Was it at that time negotiating any contract with the du Pont Company?

A. No, sir.

Mr. Hurd: I would also like to read the next sentence, although it deals with a different subject:

"Divisions will be required to take the percentage for which they are committed regardless of whether or not more favorable terms are offered on the open amount as it is believed that it is chiefly through the existence of general contracts that better prices on open amounts are frequently offered to Divisions."

By Mr. Hurd:

Q. Mr. Lynah, were there any occasions where a Division was compelled to comply with that rule?

A. Not that I recall, Mr. Hurd: That is where the teamwork came in. If it was in the best interests of the corporation to comply with these requirements, the Divisions did so.

Q. I show you a document which has been marked General Motors Exhibit No. 159 for identification; and ask you if that contains representative illustrations of the Purchasing Committee's effort to use more than one source of supply for items?

A. These were typical cases, Mr. Hurd.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 159.

The Court: It is admitted.

[fol. 2620] (Said document, so offered and received in evidence, was marked General Motors Exhibit No. 159.)

Mr. Hurd: There are certain portions of that I would like to call to the Court's attention.

On the first page, the first item, which is the action of the General Purchasing Committee on January 4, 1923, dealing with carbon steel bars, 70 percent of the corporation's requirements are contracted for with the Carnegie Steel Company, and 15 percent with Cambria Steel, and 15 percent left open.

The next item, March 14, 1923, relates to brass and copper, sheets and rods, and states that it was decided to award contracts for 75 percent of the requirements to American Brass Company, and 25 percent to another company.

The next item shows step bolts, awarded 75 percent to one company.

On the second page, first item, December 20, 1923, deals with leather, and states that:

"The contract concluded with General Leather Company for a two year period commencing January 1, 1924, was discussed.

"Referring to the second paragraph, page 2, the agreement to purchase at least 75 percent of leather requirements from General Leather Company was approved."

The next item dealing with coal provides for 60 percent of General Motors requirements to one company.

The item at the top of page 3 dealing with steel, provides that the action of the Standing Sub-committee in awarding [fol. 2621] contract to Carnegie Steel Company for 80 percent of General Motors requirements of carbon steel was approved.

The next item dealing with cap screws provides for 80 percent to one company.

The next item dealing with carbonizing compounds provides for 80 percent of General Motors requirements to one company.

On the fourth page, first full item, June 28, 1927, provides for general contract for 75 percent of General Motors requirements for acetylene and oxygen to one company.

The next item, friction tape, 80 percent to one company.

The last item on the page, this is in 1928, dealing with soda ash, a general contract for 80 percent of General Motors requirements awarded to one company.

By Mr. Hurd:

Q. Was this rule followed invariably that there would be more than one source of supply?

A. That was the standard rule, Mr. Hurd. Unless there were unusual conditions, it was followed.

Q. Can you give us an illustration of what you considered an unusual condition?

A. Well, where the field of supply under approved specifications was limited. Where there was only one source of supply who complied with the three standard requirements of quality of product, service and price, made it desirable.

Q. Do you recall whether the subject of pig iron ever came up before the committee with respect to whether there should be more than one source of supply?

A. I recall that very well. As the car production increased, the consumption of our iron foundries naturally increased, and the demand for pig iron increased.

[fol. 2622] The question of developing a second source of supply was seriously discussed. It was considered desirable, but the question of analysis of the pig iron would introduce problems in the foundry process, and the contractor who was supplying us on a contract at the time had ample production facilities, and we were assured that he could take care of our requirements.

Q. Was the second contract or second supplier contracted with in that situation?

A. I don't recall it. I think not. We did develop the possibilities with another supplier.

Q. Did you have situations where the material was available from only one supplier?

A. I cannot recall any specific instances. If not more than one source was contracted with, there were specific reasons for it.

Q. Now, turning to the subject of keeping prices confidential or secret, I believe you explained yesterday the general position of the Purchasing Committee on that subject. From whom did that proposition originate?

A. Well, it invariably originated with the supplier, because with the volume of business that we had to offer, we expected volume prices, and if he was not in a position to make those prices with his general run of customers, he naturally wanted it kept confidential.

Q. Mr. Lyrah, you testified yesterday, I believe, that the problem of keeping prices secret was constantly a problem before the General Purchasing Committee.

I now show you a document which is marked General Motors Exhibit No. 160 for identification, and ask you whether that contains the typical rulings of the General [fol. 2623] Purchasing Committee with respect to the subject of keeping prices confidential?

A. Yes, sir, these are all excerpts of the proceedings of the General Purchasing Committee meetings.

Mr. Hurd: I offer in evidence, if the Court please, General Motors Exhibit No. 160.

The Court: It is admitted.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 160.)

Mr. Hurd: I would like to call the Court's attention to the first page. The first page of the exhibit contains excerpts from the Sloan Plans for coordination of GM purchases, and without reading them, I merely call attention to the fact that in his plans, the problem of keeping prices secret was recognized.

Turning to the second page, the second item on the page is "General Motors Purchasing Committee draft of Proposed Circular Letter to Purchasing Agents," under date of June 12, 1923. It is a provision on the confidential nature of information.

"In the distribution of Contract Briefs, and particularly regarding the information to be contained in the Monthly Circular Letters from the Committee, care must be taken to insure that the information contained therein is held confidential."

By Mr. Hurd:

Q. How long after the date of this letter was it that the Committee made its first contract with the du Pont Company, approximately?

[fol. 2624] Mr. Harsha: Are you speaking of a general contract, Mr. Hurd?

Mr. Hurd: Any contract that the General Purchasing Committee made with the du Pont Company.

By the Witness:

A. Eighteen months.

Mr. Hurd: Turning to page 3, in the center of the page, the item "General Purchasing Committee minutes, October 25, 1923."

"Miscellaneous Matters.

"(d) Confidential Nature of Matters Treated at Meetings.

"There are indications that decisions regarding matters discussed at meetings of the Committee and set forth in the minutes have been communicated to suppliers. It was agreed that the Chairman would write a letter to all Purchasing Agents instructing them to use every safeguard in the use and distribution of the minutes to insure the contents being treated as confidential."

By Mr. Hurd:

Q. How long was that before the first contract was made with the du Pont Company by the General Purchasing Committee?

A. Fourteen months.

Mr. Hurd: Then the last item on page 3, the General Purchasing Committee minutes, July 2, 1924:

"Miscellaneous Matters.

[fol. 2625]. "(c) Participation in General Contracts.

"Attention was drawn to Mr. Sloan's letter of August 8, 1923, dealing with the subject which read as follows—

"FIRST: No Division is permitted to disclose prices on which general contracts are based, nor any special terms or conditions incident to said contracts, to any source whatsoever outside said Division."

By Mr. Hurd:

Q. How long was that before the first contract was made with the du Pont Company by the General Purchasing Committee?

A. Nearly six months.

Q. Now, on the 4th page, the last item. This is in 1927, General Purchasing Committee Minutes, November 30, 1927.

Mr. Hurd: (Reading)

"Participation in Quantity Discount Contracts.

"Secretary pointed out that quantity discount contracts were serving to level the prices of items covered by such contracts to the prevailing prices less the anticipated discounts because competitive suppliers either knew or suspected the percentage of quantity discount applying and figured their bids accordingly, or were permitted to meet the contractors price less the anticipated discount and the results are that some contractors formerly holding quantity discount contracts, have stated their inability to renew such contracts because of the lower level of prices established as a result of quantity discount contracts. The matter of our [fol. 2626] ability to keep quantity discounts confidential (within the Committee) and expect the divisions to support and participate in contracts carrying such confidential discounts, was discussed."

Then the last item of that exhibit I call attention to. That is 1929, under the heading "Confidential Prices."

"The suggested plan offered as a partial solution of the above much discussed subject considered, but again Committee feels any plan prohibiting our Purchasing Departments from having the full details of a contract is not feasible."

By Mr. Hurd:

Q. Mr. Ly nah, I now wish to turn to the subject of quantity discount contracts and sliding scale quantity discount contracts.

Will you explain those terms?

A. Mr. Hurd, the quantity discount contract was one in which the volume of business offered, the supplier was far in excess of what he would obtain on his usual orders. We always discussed with suppliers the effect on manufacturing

costs of having a large volume of business from one source, and studied the backlog over which he could spread his fixed charges, and effect the usual manufacturing economies that would result in such excess.

I would like to state here, too, that in discussing matters with suppliers, we always tried to have them understand that we expected them to make a profit on all the business they did with the General Motors Corporation.

In other words, there should be mutual advantages in effecting such contracts. We also knew that unless our suppliers made a profit on the business they did with us, they could not continue in business.

We were always encouraging suppliers in a particular field of supplies. The seller as a rule was willing to share his prospective savings because of the volume of business we were offering him with us, and the quantity discount seemed to be the most practical form of measuring such savings.

Q. What is the difference between quantity discount and a sliding scale quantity discount contract, if there is a difference?

A. There is a difference to this extent, that if the bidders on our invitation on general contract proposals had been doing a substantial volume of business with the corporation, that would establish his base line for the base price, and the volume of business that he had previously done, and as an inducement to the division to participate in the sliding scale quantity discounts, we would add increments to that base volume, and the supplier, or prospective contractor, is offered an additional percentage of discount for that increased increment of business.

Q. Do you recall approximately when the General Purchasing Committee started making these quantity discount contracts?

A. I think it was in 1924, sir.

Q. What part of the year?

A. I don't recall distinctly, Mr. Hurd, but I think it was in the spring of the year.

Q. Do you have any recollection as to what the first item was that was covered by such a contract?

A. I think the first item was renewable fuses.

Q. Do you recall who originated the suggestion that the General Purchasing Committee make quantity discount contracts?

A. No, sir. I don't. I was so interested in that phase of [fol. 2628] our work that I may have done it, but I hesitate to take credit for it.

Q. Do you know whether or not it was anyone in the du Pont Company that originated it?

A. Oh, no, sir.

Q. You don't know, or it wasn't?

A. No, absolutely no.

Q. Well, was it anyone in the du Pont Company who originated the suggestion?

A. No.

Mr. Hurd: My question was ambiguous.

By Mr. Hurd:

Q. Mr. Lynah, I show you a document marked General Motors Exhibit No. 161 for identification, and ask you if that contains minutes of the General Purchasing Committee dealing with the development of the idea of quantity discount contracts?

A. That was, sir; that was one of the possibilities of bringing the smaller divisions into the participation in our general contracts.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 161.

The Court: It is admitted.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 161.)

By Mr. Hurd:

Q. Mr. Lynah, the first item in this exhibit refers to the meeting of the Electrical Group. What was that group?

A. Some of our accessory plants, consisting of the Delco Light Company in Dayton, the Remy Electric Company [fol. 2629] in Anderson, Indiana, the Klaxon Horn Company, and others who used electrical supplies in the production of their products, that is, who produced electrical products.

Q. Did the accessory divisions customarily have meetings with the General Purchasing Committee?

A. They did not. There was, in the original Purchasing Committee, a representative from the accessory group, from the Electrical Division which was the Delco Light plant.

Q. And what was the occasion for this meeting that is referred to at the top of this Exhibit No. 161?

A. These smaller divisions were not in as close contact with the operations in Detroit as the car divisions, and in order to bring their volume of purchases into the picture it seemed best to have these group meetings to determine to what extent they might participate in such contracts and to determine whether the volume of requirements that they had could be included in any general contract volumes.

Mr. Hurd: I would like to call the Court's attention to the fact that at this meeting referred to in the first item on Exhibit No. 161, the meeting of the purchasing agents, the Electrical Group, the subject of sliding scale quantity discounts was discussed.

Then on page 2 at the bottom, which is a full meeting of the General Purchasing Committee that occurred a few weeks after the meeting of the Electrical Group stated in the last paragraph:

"A point of general interest elaborated upon at the meeting in Dayton was the possibility of having suppliers agree to some cumulative quantity discount to be applied particularly in cases where there would be no price advantage alone in the co-ordination of purchases. This effort has already borne fruit in some [Vol. 2630] cases and other cases are under negotiation. Wherever possible this provision will be included in general contracts."

That is on November 20th, 1924, and the accessory group meeting had been in October of that year.

Then the last item on this exhibit on page 3, dated June 17, 1926, deals with the application of sliding scale quantity discounts to purchases of equipment.

"It was agreed that effort could be profitably exerted along this line and members of the committee will sub-

mit to the Secretary list of sources of supply of machinery and equipment whose aggregate sales to divisions during the past year were in sufficient volume to warrant attempting to secure quantity discount proposals from them."

By Mr. Hurd:

Q. To what extent did the committee make quantity discount contracts, Mr. Lynah?

A. Well, we tried to apply them wherever we could.

Q. To what extent were you successful?

A. Well, we were very successful. It appealed to a great many suppliers.

Q. I show you a document, Mr. Lynah, marked General Motors Exhibit No. 162 for identification, and ask you if that contains typical illustrations of quantity discount contracts entered into by the General Purchasing Committee?

A. Yes, sir, I should say so.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 162.

[fol. 2631] The Court: It is received.

(Said document so offered and received in evidence was marked General Motors Exhibit No. 162.)

Mr. Hurd: I would like to call attention to the first item appearing on that exhibit, which is dated in July of 1924 entitled "Savings Resulting from General Contracts on Sliding Scale of Discount Basis":

"(These would include contracts such as our present fuse contract where the discount increases with each thousand dollars of purchases made and where obviously the lumping of our purchases increases the amount expended.)

"The quantity bought by divisions being known the savings can be easily computed."

By Mr. Hurd:

Q. Is that fuse contract mentioned here, the one you referred to earlier?

A. Yes, that is the one.

Q. Your first recollection of the use of such contract by the committee?

A. It is.

Q. I call attention to the second item, which is aluminum, November, 1924:

"It was considered desirable to continue our policy of dealing with the Aluminum Company of America. The matter of cumulative quantity discounts will be discussed with this company."

On the second page at the bottom is an item I would like [fol. 2632] to refer to. This is from the committee's minutes, September 24, 1925:

"Consideration of Alemite-Zerk General Contract Proposal. This proposal which offers to General Motors on a contract for General Motors' requirements of car lubricating systems a quantity discount of five percent on purchases up to \$500,000.00 per year, and seven and one-half percent on purchases in excess of \$500,000.00 per year, with a one percent additional cash discount, was considered."

Turning over to page 4, first item—this is from the minutes of August 1926—Cleveland Graphite Bronze Company.

"Extension of contract for period of one year from January 1, 1927, authorized because this company agreed to increase the sliding scale of quantity discounts beyond the present minimum of ten percent for \$1,000,000.00 to include eleven percent for \$11,000,000.00, twelve percent for \$12,000,000.00, and so forth, and to make this new scale retroactive to January 1, 1926."

The next item deals with quantity discounts with Eastern Machinery Screw Corporation and Trico Products Corporation.

Page 5, center of the page, quantity discount contract, Horton Chucks.

The last item on the page is one we got in Carbon Tool Steel.

While I will not refer to any of the others particularly, [fol. 2633] with one exception, I would like to point out the exhibit is approximately 23 pages long, and is filled with dozens of illustrations of these contracts of various types of products with various types of companies.

There is one further item I would like to refer to on page 9, the second item, which is Lubricating Fittings:

"Secretary advised that Executive Committee had approved making of quantity discount contract with Bassick-Alemite Company for General Motors requirements of Alemite-Zerk fittings such as we now use, from October 1, 1926 to June 30, 1928."

By Mr. Hurd:

Q. Now, Mr. Lynah, was it customary to have the Executive Committee pass upon the contracts entered into by the Purchasing Committee?

A. The Purchasing Committee had been instructed by the Executive Committee that all contract commitments, even the requirements contracts, extending beyond the twelve months period would not be allowed without express permission of the Executive Committee.

Q. Was that the occasion for sending this contract to the Executive Committee?

A. That was the occasion, and the request was supported by the fact that this particular item was standard in the trade and there was no competition available at that time.

Q. And this was a contract that was to continue for more than one year?

A. Yes, for two years.

Q. Did the Committee make any effort to induce divisions to buy under the quantity discount contracts that it entered into?

A. Well, the proper functioning of the quantity discounts [fols. 2634-2635] depended upon the participation of divisions, and they were being constantly urged to participate.

Under the General Motors scheme of organization, nobody was compelled to do anything. If it was in the best interest of the corporation, it was expected that they would do it.

Q. I show you a document marked General Motors Exhibit No. 163 for identification, and ask you if that contains

typical illustrations of the committee's encouraging participation in quantity discount contracts?

A. Yes, sir. I am familiar with all of these.

Q. Are those typical of the efforts made by the committee to obtain participation?

A. They are typical.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 163.

The Court: It is received.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 163.)

[fol. 2636] By Mr. Hurd:

Q. Turning to another subject, Mr. Lynah, you explained yesterday in general the multiple item discount contracts, the contracts providing for a discount by combining various products.

Do you recall who originated the idea of the multiple item discount contracts?

A. I did.

Q. I will show you a document that is marked General Motors Exhibit No. 164 for identification.

By looking at that document, can you tell us approximately when you first took up with the Committee the idea of them multiple item discount contracts?

A. I should say, Mr. Hurd, from the first dates listed in this exhibit about the middle of 1926.

Q. Those first two items are your first recollection of the subject coming before the Committee?

A. Yes.

Q. Does this exhibit contain illustrations of the Committee's action with respect to these multiple item discount contracts?

A. Typical illustrations.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 164.

The Court: It is received.

(Said document so offered and received in evidence was marked General Motors Exhibit No. 164.)

[fol. 2637] By Mr. Hurd:

Q. Calling your attention, Mr. Lynah, to the first item on this Exhibit 164:

“Paints for Maintenance Uses.

“This item rejected for questionnaire at 27th meeting on July 13th was again presented to Sub-Committee because of certain savings to be afforded by making general contract. It was agreed that a plan may be worked out with the du Pont Company under which they would offer a sliding scale of quantity discounts applying to all items purchased by General Motors divisions from the du Pont Company. Secretary was instructed to invite Mr. W. P. Allen of the du Pont Company to meet with the Standing Sub-Committee at its meeting to be held during the week of August 9th.”

Q. Was an invitation extended to Mr. Allen of the du Pont Company?

A. It was.

Q. Did he attend?

A. He did.

Q. Was a contract of that type worked out with Mr. Allen subsequent to that meeting?

A. Yes.

Q. Who handled the negotiations for General Motors?

A. I did.

Q. I call your attention, Mr. Lynah, to certain Government Trial Exhibits which are in evidence; Government Trial Exhibits 462, 464 and 465. Will you look at those and tell the Court whether those letters contain the terms of the arrangement that was worked out with the du Pont Company for multiple item discount contracts?

A. Yes, I am familiar with the correspondence.

Q. Does that set forth the terms of the agreement that [fol. 2638] General Motors made with the du Pont Company regarding the multiple item discount?

A. It does.

Q. Was that arrangement with the du Pont Company unique?

A. It was not unique. It was put into effect with other suppliers.

Q. Now, referring again to General Motors Exhibit No. 164, I would like to call the Court's attention to a few of the other items. I have already referred to the first item on the first page which deals with inviting the du Pont Company to consider such a contract.

I would like to call attention to the second item which deals with the Standard Oil Company. These are the minutes of the same meeting which occurred at the same time as the minutes regarding the du Pont Company.

"It was suggested that representatives of the Standard Oil Company be requested to appear before the Sub-Committee at its meeting to be held during the week August 9th to consider the volume of purchases by General Motors divisions with a view to working up a sliding scale quantity discount price."

And on the third page, the first item:

"General Contract Proposals Authorized for Development.

"Truscon Products.

"General Contract proposals for General Motors requirements of products supplied by Truscon Steel Company, with quantity discount provision, for one year from November 1, 1926."

[fol. 2639] By Mr. Hurd:

Q. Is that a multiple item discount contract?

A. It was.

Q. The next item, with the Cleveland Graphite Bronze Company.

"It has been arranged with the Cleveland Graphite Bronze Company, in addition to the twelve percent quantity discount from face of invoices effective October 15, 1926, and retroactive to include all business done with them since January 1, 1926, to apply additional discounts as follows:

By Mr. Hurd:

Q. Was that a multiple item quantity discount?

A. It was.

Mr. Hurd: On the top of page 4, Machinery and Equipment.

"Quantity discount with Potter & Johnson Machine Company for General Motors requirements of seller's manufacture of machines and tools—"

By Mr. Hurd:

Q. Was that a multiple item quantity discount?

A. It was.

Mr. Hurd: The next item deals with Carriage Bolts, Clevis Pins, Hexagon Head Bolts, Hub Bolts, Lag Screws, Machine Bolts, Rivets, Semi-finished Nuts, Shackle Bolts, Step Bolts, and Stove Bolts.

"Quantity discount contracts with the following concerns for such of the above line of items and any others that they supply,"

[fol. 2640] listing the various companies to be contracted:

The next item is the Rand Kardex Service Corporation Products:

"Quantity discount contract for General Motors requirements of seller's products for period of one year."

On page 5, the item Remington Rand, Inc., Products:

"General contract for General Motors requirements of the following items such as we may purchase from them on which a scale of quantity discounts also apply."

Listing a dozen or more items.

The last item on page 5 is "Woodworking Machinery," quantity discount contract for General Motors requirements of combined purchases of woodworking machinery as manufactured by the principals represented by him as listed on following page, listing a number of manufacturers.

Then on page 6, two-thirds of the way down the page, deals with Witherow Steel Corporation.

"Quantity discount contract for General Motors requirements of such products including rolled rear axle shafts, gear shift levers,—"

and so forth, "and any other products of their make as are purchased from them."

Then on page 7 is a similar contract, Lock Washers. Then the next item is a similar contract regarding Cutters, Hobs, Reamers, and so forth.

[fol. 2641] By Mr. Hurd:

Q. Were all the contracts referred to in this exhibit illustrations of the multiple item quantity discount contract?

A. They were.

Q. Now, to what extent did the multiple item contract you made with the du Pont Company result in savings to General Motors?

A. It resulted in substantial savings for the period of several years.

Q. What happened to it at that point?

A. Well, competition came into the picture. The price level flattened out as time went along.

Q. Did the savings continue?

A. They did not. After about 1928, I believe, they practically disappeared.

Q. Mr. Lynah, I show you a document marked General Motors Exhibit No. 165 for identification, and I ask you if that is a tabulation of the savings resulting from the multiple item discount contracts to the du Pont Company.

A. The first four items, Mr. Hurd, took place during my period of employment by General Motors. I am not in a position to answer the last two.

There were practically no savings anyhow.

Mr. Hurd: Well, I can assure the Court that all the figures were taken from the books of General Motors Corporation, and I offer in evidence General Motors Exhibit No. 165, of course, subject to counsel for the Government finding any error in the document.

Mr. Harris: We object to the exhibit, not on the ground suggested by counsel, but on the ground that these figures show the amount per vehicle and do not show whether [fol. 2642] those vehicles were ones that had the du Pont products on them.

They could put anything in here.

Mr. Hurd: Well, I can explain that. They were not limited to the vehicles that had du Pont products on them.

The last column dealt with the amount per vehicle as the total savings in dollars down to how much these amounts were per car, whether they did or did not use it.

Mr. Lynah, in some of the earlier minutes of the Purchasing Committee, was pointing out savings under a particular contract would be "X" dollars, and that would be an average—I think one was 27 cents a car. It did not mean that all cars used it, but merely as a demonstration as to what extent the saving was important to General Motors, if it was important at all.

The Court: Well, the Government does not question the accuracy of the figures?

Mr. Harris: I am not questioning the accuracy of the figures. I am saying it is absolutely useless as an exhibit, nothing relative to du Pont products at all.

Mr. Hurd: It shows savings resulting from this du Pont contract.

Mr. Harris: They could save a lot if they did not use the du Pont product. They could save everything.

The Court: Well, this deals with discounts, doesn't it?

Mr. Harris: But not on the du Pont products, your Honor. These figures cover all vehicles, all vehicles of every type, not vehicles on which the du Pont products [fol. 2643] were used. I say they have no relevancy to the issues before the Court as to whether or not du Pont was preferred.

Mr. Hurd: Well, they have a relevancy, I believe, to the charges in the complaint that du Pont subsidized General Motors by the special discounts it gave.

These are discounts received from the du Pont Company, on purchases made from the du Pont Company, pursuant to this contract.

The Court: I think it is admissible. It is received in evidence.

(Said document so offered and received in evidence was marked General Motors Exhibit No. 165.)

Mr. Hurd: I would like to call the Court's attention to the fact that in the first three years there were substantial savings resulting from this, in the year from October, 1926, to June, 1927—that is a nine-month period—a savings of \$77,000, which was an average of seven cents for every car

made by General Motors regardless of whether it did or did not use the product.

In the next full year to July, July, 1927, to the end of June 1928, there was a savings resulting of \$200,000.00 or an average of 12 cents a car; and in the third year of July '28 to the end of June '29, the largest year, a saving of \$379,000 odd, or 21 cents a car.

The next year and a half there was no discount earned under the contract.

In the fifth year there was a discount of \$1,000.00 earned, or one-tenth of a cent per car.

[fol. 2644] In the last year that it was in effect, there was a saving of \$400.00 or eight one-hundredths of a cent per car.

The total saving throughout the whole period that it operated was \$648,000.00 or an average of 8 cents per car.

By Mr. Hurd:

Q. Mr. Lynah, I would now like to turn to the subject of "Duco." Yesterday we introduced in evidence General Motors Exhibit No. 151 which contained a list of 32 items that you said you had prepared at the beginning of the operation of the General Motors Purchasing Committee.

I want to call your attention to the fact that on that exhibit the last item that you listed was paints-color, showing that in the year 1922 General Motors had spent \$1,300,000.00 on paints-color, and I believe you testified yesterday that this list was suggestions you presented to Mr. Sloan and to the Committee as possible subjects for contract consideration.

Did the subject of paint come before the Committee immediately?

A. It did not.

Q. Do you recall approximately how long it was before that subject was brought up for consideration by the General Purchasing Committee?

A. Well, Mr. Hurd, as I recall it, in the spring of 1922 the du Pont Company had brought their development of a new nitrocellulose base paint which was known as, "Duco" into the paint market, and the Oakland Division, the Oakland Car Division of General Motors, was beginning experiments with the use of that product.

The question of automobile paints as a general contract possibility was simply not taken up by the General Purchasing Committee because the whole question was in flux, as you might say.

Q. Mr. Lynah, I will show you a document marked General Motors Exhibit No. 166 for identification, and ask you whether or not that contains quotations from the minutes dealing with the subject of paints?

A. It does.

Q. Now, looking at that document, does that refresh your recollection as to when the subject of paints originally came before the General Purchasing Committee?

A. It does, and I recall distinctly that it was in the fall of 1923.

Q. And what was done about it by the Purchasing Committee at that time?

A. Well; there were no standards for paints and varnishes that had been set up to guide the Purchasing Committee in its efforts. So that the question was referred to the Paint and Enamel Committee that had been established meanwhile, on which the Paint Departments of the divisions were represented, and we looked to them to take up the matter of approving paints for use by the—

Q. Was that similar to the other standardizing committees that you referred to yesterday, or was it different?

A. That was one of the committees that had been set up for such purposes.

Q. For standardizing?

A. Standardizing and writing specifications for paints, varnishes and other finishes.

Q. Did you contact the Paint and Enamel Committee subsequent to the committee's taking up the subject in October, 1923?

A. I did.

Q. And whom did you contact?

A. Mr. F. O. Clements who was assistant director of the Research Laboratories, was chairman of the Paint and Enamel Committee; Mr. H. C. Mougey was chairman of the—who was the control chemist following the "Duco" developments.

[fol. 2646] Q. What did you learn from Mr. Clements at that time?

A. We learned there had been no standardization of paints.

Q. Did the Committee, the General Purchasing Committee, do anything more about the subject at that time?

A. Not until the fall of 1924, as I recall it, that they authorized a questionnaire to be sent out.

Q. I call your attention to the third item on this Exhibit No. 166. Does that refresh your recollection as to when a questionnaire was sent out?

A. Yes, that is the official record.

Q. Do you know to what extent "Duco" had been adopted by the divisions at that point, at that time?

A. Oakland had pretty much adopted "Duco." The other divisions were still experimenting.

Q. Did you get replies back from the divisions regarding their requirements pursuant to your questionnaire?

A. The uses of "Duco" by divisions had not progressed far enough to indicate any volume requirement, and the approval of "Duco" by the divisions was still in question.

Q. I call your attention to the last item on the first page of General Motors Exhibit No. 166.

Does that—on the last item on the first page—does that refresh your recollection as to when you received information from the divisions regarding their demands for paint and "Duco"?

A. Yes, that is the official record.

Q. And is that September 4, 1924? Is that about the time that you obtained information?

A. That is about the time.

Q. At that time were they using "Duco"?

A. On an experimental scale.

Q. Did you take up negotiations with the du Pont Company [fol. 2647] at some date for the contract covering "Duco"?

A. As I recall it, the first inquiry to the du Pont Company on a contract basis was in the late fall of 1924.

Q. Then was the contract with the du Pont Company worked out shortly after that?

A. It was. I believe the first contract was worked out with the du Pont Company, became effective January 1, 1925.

Q. At that time were the divisions generally using "Duco"?

A. Yes, sufficiently to warrant the contract development.

Q. Was this a quantity discount contract or cumulative quantity discount contract?

A. The development or the offer of a quantity discount contract was made by the du Pont Company, but we insisted on a flat percentage discount.

Q. Do you recall what percentage it was?

A. I do. It was 6 per cent.

Q. 6 per cent discount regardless of the amount you purchased?

A. Yes.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 166. It is the minutes that he has been discussing.

The Court: It is admitted.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 166.)

By Mr. Hurd:

Q. I show you a document, Mr. Lynah, marked General Motors Exhibit No. 167 for identification.

[fol. 2648] I ask you if that is a copy of the contract that was worked out with the du Pont Company at this time?

A. I believe that was the first contract.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 167.

The Court: It is received.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 167.)

Mr. Hurd: I would like to call the Court's attention to a few of the items in Exhibit No. 166, the minutes.

The first item is October, 1923, and the secretary was instructed to write the Paint and Enamel Committee to find out if anything toward standardization could be accomplished. That refers to paints—color, varnish.

The third item shows that the subject was presented for questionnaire. Mill White paint and "Duco" paint and reducer, and a questionnaire was ordered developed.

The last item on the first page is the report on the questionnaire authorized at the July 2nd meeting, and shows the aggregate annual expenditures were reported, that is reported by the divisions, as follows:

“Duco” paint and reducer, \$1,394,039.

Mill White paint, \$16,000.

On the second page, the item in the center of the page—this is in November, 1924—the heading is “Duco.”

“Letter from Chemical Products Division of the du Pont Company offering General Motors the opportunity to pool their purchases of ‘Duco’ and Thinner so [fol. 2649] that each unit might enjoy the maximum discount earned by the pool during any three months period, and enclosing copy of letter to Purchasing Agents of Car Divisions dealing with the offer was read. It was believed that the General Motors purchases of ‘Duco’ together with those of Fisher Body Corporation would in any period aggregate the amount required for maximum discount, but that even though this amount is not regularly met the maximum discount should be insisted upon, and further, if agreeable, that this discount be deducted from the invoice price on each invoice so as to avoid cumulative credit which would not be properly reflected in current car costs.

“Forecasts of divisions’ requirements for six months from December 1, 1924 will be promptly secured. It was brought out that no effort had yet been made to develop competitive price situation as regards pyroxylin paints and that this fact should be given consideration by the du Pont Company.”

Then the last item at the bottom of page 2:

“‘Duco’.

“Secretary advised that agreement had been reached with Chemical Products Division of du Pont to charge on a general contract for General Motors’ requirements of Pyroxylin finishes for the first six months of 1925 net prices equivalent to the list prices less 6%—”

General Motors Exhibit No. 167, which is a contract, paragraph 1:

"Description and Quantities:

[fol. 2650] "Buyer's requirements of Pyroxylin finishes, including 'Duco' and 'Duco' Thinner, at the following prices:"

Then they list the prices.

"It is agreed that the above prices are subject to a discount of 6%, and the prices charged on invoices will be NET prices, which will include this 6%."

I call attention to the last paragraph on the page, paragraph 4:

"Delivery shall be made . . . on or before June 30, 1925."

That is the six months.

By Mr. Hurd:

Q. Mr. Lynch, who negotiated this contract in behalf of General Motors?

A. This contract of January 2, 1926?

Q. 1925.

A. I did.

Q. The contract refers to Pyroxylin Finishes. What were Pyroxylin Finishes?

A. Pyroxylin Finishes would include "Duco" and the accompanying thinners and so forth. They were all combined as Pyroxylin Finishes.

Pyroxylin is nitrocellulose or gun-cotton in the trade language.

Q. Prior to your negotiation of this contract, did you make any effort to find out whether or not any competitor of du Pont had a Pyroxylin finish that was satisfactory?

A. I did. But, Mr. Hurd, I also knew the complexity of Pyroxylin finishes.

The manufacture of nitrocellulose is a very complicated [fols. 2651-2653] process. The purification of the raw cellulose that goes into the manufacture of nitrocellulose and

the subsequent required purification of the nitrated product itself, in order to prolong its life before decomposition might set in, and the use of stabilizing chemicals in those mixtures, the introduction of a proper amount of nitrocellulose into solutions—and the thing that made “Duce” possible was the discovery of a chemical that made the introduction of a high percentage of solids into the solutions possible, the thing that every lacquer manufacturer had been looking for for years. I knew from my former experience that the paint and enamel concerns who did not produce their own nitrocellulose would be slow in developing competitive products for “Duce.”

At the same time, we did try through our Research Chemical Department to keep in touch with possible other suppliers of Pyroxylin finishes as substitutes for “Duce,” and to encourage their entry into that branch of the business.

So that the advent of competition into this particular field was very slow. The product being new to all of us required long-time exposure tests, and the only answer to the stability and durability of the product was this long-time exposure test.

Q. Mr. Lynah, I show you two documents marked respectively as General Motors Exhibits 168 and 169 for identification, and ask you whether or not that is an exchange of correspondence between you and Mr. Moguey in the summer of 1924?

A. It is.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit Nos. 168 and 169.

[fol. 2654] By Mr. Hurd:

Q. Mr. Lynah, pursuant to Mr. Moguey's request, did you contact any of these companies for samples?

A. I did.

Q. I show you documents which have been marked for identification as General Motors Exhibits 170 and 171, respectively.

Are those copies of letters which you sent to other paint companies?

A. They are.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibits 170 and 171.

The Court: They are admitted.

(Said documents, so offered and received in evidence, were marked General Motors Exhibits Nos. 170 and 171.)

Mr. Hurd: I would like to read the first one, Exhibit No. 170. That is a letter dated August 4, 1924, a week after Mr. Moguey's letter. This is from Mr. Lynah to the Sherwin-Williams Company:

"If your developments of Pyroxylin Paints have proceeded sufficiently far so that you are in position to quote prices and supply the products in any quantity we should like to have you send to—

"General Motors Research Corporation,
Dayton, Ohio,

"Atten: Mr. H. C. Moguey

samples for inspection and determination.

[fol. 2655] "Please send us quotations covering any samples which you send to Mr. Moguey."

Signed, General Purchasing Committee, James Lynah, Secretary.

General Motors Exhibit No. 171 is identical, the same date, from Mr. Lynah, except it is to the Valentine Varnish Company, rather than Sherwin-Williams.

By Mr. Hurd:

Q. Do you recall, Mr. Lynah, whether you also sent similar inquiries to the other companies that Mr. Moguey had listed?

A. I don't recall, but naturally I should have.

Q. At the time you negotiated the first "Duco" contract—this is General Motors Exhibit No. 167—had Research or the Paint and Enamel Committee approved any competitive pyroxylin finish?

A. They had not.

Q. What was the occasion for that contract running for six months, the first "Duco" contract?

A. I presume in the hope that competition might enter into the picture.

Q. You can't presume. Do you have any recollection?

A. I don't recall.

Q. After you made that first "Duco" contract, which you say was negotiated November and December, 1924, did you make any further effort to obtain a competitive pyroxylin finish?

A. We made continuous efforts.

Q. Mr. Lynah, I show you a document that is marked General Motors Exhibit No. 172 for identification.

Is that a copy of a letter from you to members of the Purchasing Committee?

A. It is.

[fol. 2656] Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 172.

The Court: It is received.

(Said document so offered and received in evidence was marked General Motors Exhibit No. 172.)

Mr. Hurd: This is a letter dated January 22, 1925, from Mr. Lynah to nine different individuals.

By Mr. Hurd:

Q. Were those nine addressees all members of the Purchasing Committee at that time?

A. They were.

Mr. Hurd: The subject is "Duco."

"It comes to our attention that Fisher Body are using, on certain work, pyroxylin finishes of a manufacture other than 'Duco.' Proxylin finishes as adapted for automobile painting are very complex in character and their fitness and durability can be determined only after long time tests.

"No agency of General Motors has made any durability test of the Forbes product which is now being used by Fisher Body, in fact we understand that this make of pyroxylin finish is rather new in the market.

"It is appreciated that a field of competition for 'Duco' should be developed. Certainly because of the

proven qualities of 'Duco' it has no competition at the present time.

"It is suggested that we request General Motors [fol. 2657] Research to begin certain characteristic and durability tests of competitive pyroxylin finishes, and you are requested to suggest any makes which have been brought to your attention by reliable concerns."

By Mr. Hurd:

Q. Did the General Purchasing Committee agree with you and proceed to make an effort to have tests made of competitive products?

A. They did.

Q. I show you a document marked Government's Trial Exhibit No. 453 which is already in evidence. It is dated February 6th, 1925—your letter to the committee had been dated January 22, 1925, two weeks prior.

Does this Government's Exhibit No. 453 correctly reflect the action of the purchasing committee on this subject at that time?

A. It does.

Mr. Hurd: If the Court please, I should like to read a portion of it, headed "Duco".

"Attention was called to the use by Fisher Body Corporation of a pyroxylin finish manufactured by Forbes Varnish Company. The very complex nature of pyroxylin compounds was described and the experience required for the production of stable and durable compounds emphasized. The Forbes product has not been put through the exhaustive durability tests that 'Duco' has been subjected to. It is known that the durability of such finishes can be determined only by long time exposure tests. It was agreed that General Motors Research be requested to begin durability tests of pyroxylin finishes manufactured by—

[fol. 2658] "Acme White Lead & Color Works

Beckwith-Chandler Company

Forbes Varnish Company

Murphy Varnish Company

Patton Pitcairn Div. of Pittsburgh Plate Glass Co.

Valentine Varnish Company

The Zapon Company."

By Mr. Hurd:

Q. Following this, was Research requested to make tests of pyroxylin finishes made by these companies?

A. It was.

Q. Mr. Lynah, I show you two exhibits, one document marked General Motors Exhibit No. 173 and another one No. 174 both for identification.

Is the first one a copy of your communication to Mr. Clements on this subject?

A. That is GM 173?

Q. Right.

A. Yes.

Q. And the second document, No. 174, is that a copy of Mr. Moguey's letter to Valentine, which was sent to you?

A. It is.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibits Nos. 173 and 174.

The Court: Let the record show when an offer is made without objection, it is received without Court ruling.

Mr. Hurd: Thank you.

(Said documents, so offered and received in evidence, were marked General Motors Exhibits Nos. 173 and 174.)

[fol. 2659] Mr. Hurd: I should like to read both of these documents. The first one is dated February 10th, 1925. It is GM 173. That is just a few days after the action of the Purchasing Committee instructing Research to make these tests. It is a letter to Mr. F. J. Clements, General Motors Research:

"This matter has been discussed by our committee and you are requested to secure samples and make continuous durability tests of the following pyroxylin finishes including 'Ducol'."

Then the items manufactured by the Valentine Varnish Company, Murphy Varnish Company, Patton Pitcairn Division of the Pittsburgh Plate Glass Company are referred to.

"In addition to the above there is the Forbes product which Fisher Body have been using to some extent,

and a product manufactured by the Acme White Lead and Color Works, the trade-name of which we do not have.

"The product manufactured by the Zapon Company of Stamford, Conn. and the Beekwith Chandler Company of Newark, N. J. might also be properly tested."

General Motors Exhibit No. 174 is a letter, dated March 13, 1925, from Mr. Mougey to Valentine & Company with a copy to Mr. Lynah.

"In reply to your letter in regard to samples of pyroxylin finishes, the General Motors Purchasing Committee is anxious to keep in touch with the new developments in pyroxylin finishes. There are now about 25 or 30 brands of pyroxylin finishes for automobiles on the market. Some of these finishes may be good [fol. 2660] while some are very bad, as we have found from actual experience.

"In all probability the General Motors Purchasing Committee will have preliminary tests made on the samples submitted and in the case of materials which look interesting, further tests will probably be made. The information obtained by the General Motors Purchasing Committee would be sent to the different General Motors Units through their connection with the Purchasing Committee.

"In regard to the inquiry from the Buick, it appears that the Buick Company individually is interested in your material. Tests made by the Buick will be largely for Buick information only."

By Mr. Hurd:

Q. Mr. Lynah, when the first "Duco" contract, the one in evidence of January, 1925, which was a six month contract, when it expired, was a new contract made with the du Pont Company covering pyroxylin finishes?

A. There was.

Q. Who conducted the negotiations that led up to the making of that contract?

A. I did.

Q. Before you entered into that contract did you make any further inquiries as to whether competitive products

had been approved by research of the Paint and Enamel Committee?

A. I did. There had been no competitive products approved.

Q. Mr. Lynah, I show you three documents marked General Motors Exhibits Nos. 175, 176 and 177, for identification, and ask you if those are letters passing back and forth between yourself and Mr. Mougey regarding the subject matter of "Duco"?

A. They are.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibits Nos. 175, 176 and 177.

(Said documents so offered and received in evidence were marked General Motors Exhibits Nos. 175, 176 and 177, respectively.)

Mr. Hurd: The first document, General Motors Exhibit No. 175, I would like to read. It is a letter dated May 20, 1925, from Mr. Lynah to Mr. Mougey:

"We are negotiating new contract with the du Pont Company for 'Duco' requirements for the second half of this year.

"It is highly desirable to have some competitive figures. There is no use in our getting them from suppliers whose pyroxylin finishes are not approved.

"I understand that Paige-Jewett, Flint, and Packard are using Zapon. Have your tests gone far enough for you to permit of putting Zapon on the approved list?

"Are there any others that you are in position to approve? Please advise promptly."

By Mr. Hurd:

Q. Mr. Lynah, was your purpose in getting this information solely to find out what price other companies were charging?

A. No, sir, we never solicited the quotations from any companies with whom we were not willing to do business.

[fol. 2669] Mr. Hurd: If the Court please, I would like to offer in evidence General Motors Exhibit No. 178, which is a letter, dated May 26, 1925, from Mr. Clements to the Paint and Enamel Committee, a document taken from our file.

(Said document so offered and received in evidence was marked General Motors Exhibit No. 178.)

Mr. Hurd: I call attention to the fact that this is sent to a number of different individuals, Mr. Housier, Mr. MacQuaid, Mr. Widman, Mr. Bergland, Mr. Kinney, Mr. Weckler, Mr. Scott and Mr. Mougey.

By Mr. Hurd:

Q. Were those the members of the Paint and Enamel Committee?

A. They were.

Q. The first sentence is "There are a number of questions up for consideration by the Paint and Enamel Committee."

Then dropping down to the last paragraph:

"In addition, Mr. Lynah, Executive Secretary, General Purchasing Committee, has asked the laboratory [fol. 2670] to pass upon various finishes intended to substitute for 'Duco'."

This second contract which you were negotiating at this time was for what period?

A. Six months.

Q. With whom did you carry on these negotiations?

A. With Mr. Allen of the Cellulose Products Department of the du Pont Company.

Q. Was there any discussion between you and Mr. Allen regarding the length of time that contract would run?

A. Mr. Allen wanted a longer contract than six months. I held to six months because we expected to approve competition.

Q. Well, Mr. Lynah, I want to call your attention to General Motors Exhibit No. 162 which is in evidence, to the second page, the first full item, "General Purchasing Committee Minutes, June 24, 1925, Pyroxylin finishes."

Do you find that?

A. Yes, sir.

Mr. Hurd (Reading):

"Secretary advised that the du Pont Company had offered for a period of one year beginning July 1st,

1925, prices based on a sliding scale of quantity discounts, the maximum being a discount of 12% on business over \$700,000.00 placed in one quarter of a calendar year. On the net amount of the invoice 1% cash discount is allowed. Prices include deliveries to all points of 'Duco' in 5 gallon cans, and Thinner in drums. In order to secure the maximum discounts it will be necessary to combine our purchases with those of Fisher Body Corporation. Fisher Body will be requested to participate in a contract."

[fol. 2671] By Mr. Hurd:

Q. Do you know whether or not Fisher Body was requested to participate in the contract?

A. Yes, they were.

Q. And do you know whether or not they did participate?

A. They agreed to participate.

Q. Do you know who it was, if anyone, connected with the General Purchasing Committee, who contacted the Fishers regarding this?

A. As I recall, Mr. J. L. Pratt who was a member of the Purchasing Committee and an executive of the corporation, a central office official.

Q. At that time do you know whether or not the Fisher Body Company had been using "Duco"?

A. I think they had been experimenting with colors, but not on a production basis.

Q. Now, Mr. Lynah, I show you a document marked General Motors Exhibit No. 179 and ask you if that is the second contract, the second "Duco" contract, that you negotiated with the du Pont Company?

A. It is.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 179, and I call the Court's attention to the fact that it is for 100 per cent of Buyer's requirements—the buyer being General Motors Corporation—and 50 per cent or more Fisher Body Corporation's requirements of pyroxylin finishes, including "Duco" and "Duco" thinner.

Following that are the prices, and then the schedule of discounts, and at the bottom it shows that it is for a period of six months expiring December 31, 1925.

By Mr. Hurd:

Q. Following the making of this second "Duco" contract, Mr. Lynah, did you continue with any efforts to test competitive materials?

A. Continuous efforts.

[fols. 2672-2673] Q. Do you recall whether or not the divisions were requested to paint some, finish some cars, with competitive pyroxylin finishes in accordance with Mr. Mougey's suggestion in the memorandum I read?

A. The Paint and Enamel Committee handled that matter, and I believe they requested each of the divisions to—

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibits Nos. 180, 181, 182 and 183, which are letters from the Paint and Enamel Committee to various General Motors Divisions.

These were all taken from the files of General Motors Corporation.

(Said documents so offered and received in evidence were marked General Motors Exhibits Nos. 180, 181, 182, and 183, respectively.)

Mr. Hurd: I would like to read the first one. It is dated July 27, 1925, as are all of the others. It is from Mr. Clements, Chairman of the Paint and Enamel Committee, and Exhibit No. 180 is addressed to Mr. H. C. Weckler of the Buick Company, Flint, Michigan.

By Mr. Hurd:

Q. What was Mr. Weckler's connection with the Buick Company?

A. He was the production manager at the time; no, he was a works engineer.

[fol. 2674] By Mr. Hurd:

Q. Mr. Lynah, by the time this second "Duco" contract was about to run out, had the paint and enamel committee or General Motors Research approved of any competitive pyroxylin finish?

A. They had not,

Q. Were negotiations re-opened with the du Pont Company for a third "Duco" contract?

A. They were.

Q. About when was that?

A. That would be in the Fall of 1925.

Q. Who conducted them on behalf of General Motors?

A. I did.

Q. And was a contract entered into?

A. It was.

Q. And what period of time was covered by this contract, do you recall?

A. I recall that that period of time covered by that contract was one year, because it had been indicated by the research that it would take at least another year to write a proof of competition, that could supply all of the varieties of color and so forth into the picture.

Q. Mr. Lynah, I show you General Motors Exhibit No. 184, and ask if that is a copy of the third company contract to which you referred?

A. It is.

Mr. Hurd: If the Court please, I offer that document in evidence, General Motors Exhibit No. 184.

[fol. 2675] (Said document, so offered and received in evidence, was marked General Motors Exhibit No. 184.)

Recess.

[fol. 2676] JAMES LYNAB, having been previously duly sworn, resumed the stand, was examined and testified further as follows:—

Direct examination (continued).

The Court: Proceed.

Mr. Hurd: If the Court please, the last document introduced before the noon recess was General Motors Exhibit No. 184, which is the third "Duco" contract, dated January 1, 1926.

I wish to call the Court's attention to the fact that it is for 100 percent of the buyer's requirements, that is, General Motors, for domestic plants, and fifty percent or more of the Fisher Body Corporation's requirements.

As appears at the bottom of page 2 of the document, it was to run until December 31, 1926.

By Mr. Hurd:

Q. Mr. Lynah, at the time this third "Duco" contract was negotiated, did you also negotiate with the du Pont Company regarding a paint and varnish contract?

A. I did.

[fol. 2677] What type of contract was that?

A. That was what we call requirements of seller's make. Such a contract made participation by the divisions optional, and was made because prices were favorable.

Q. I show you a document marked General Motors Exhibit No. 185 for identification, and ask you if that is the paint and varnish contract to which you have referred?

A. It is.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 185.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 185.)

Mr. Hurd: I would like to call the Court's attention to the first page of the document, under Paragraph 1, "Buyer's requirements of Seller's manufacture of the following paint and varnish type materials."

At the bottom of the document, it is also to expire December 31, 1926.

Q. Mr. Lynah, when the third "Duco" contract ran out, which would be the end of 1926, was a further contract negotiated with du Pont Company covering "Duco"?

A. It was, but for buyer's requirements of seller's make because competition had entered into the picture.

Q. That was not a requirements contract?

A. It was not.

Q. I show you a document marked General Motors Exhibit 186 for identification, and ask you if that is the fourth "Duco" contract, the contract that you entered into the end of 1926?

A. It is.

[fol. 2678] Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 186.

(Said document so offered and received in evidence was marked General Motors Exhibit No. 186.)

Mr. Hurd: I wish to call the Court's attention to the front page of the document, under Paragraph 1, "Buyer's requirements of Seller's make of Pyroxylin Finishes," where the prior one had been 100 percent of Buyer's requirements.

I also call attention to the notation at the bottom of the page, it expires at the end of 1927.

By Mr. Hurd:

Q. When that expired was a further "Duco" contract negotiated with the du Pont Company?

A. Yes.

Q. I show you General Motors Exhibit No. 187 for identification.

Is that the "Duco" contract negotiated at the end of 1927?

A. It is.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 187.

(Said document so offered and received in evidence was marked General Motors Exhibit No. 187.)

Mr. Hurd: I call attention to the similar items on the front page: That it is buyer's requirements of seller's make rather than a requirements contract, and the expiration date at the bottom of the sheet is December 31, 1928. [fol. 2679] By Mr. Hurd:

Q. Mr. Lynah, when that expired was a further similar contract negotiated?

A. I believe there was.

Q. I show you General Motors Exhibit No. 188 for identification.

Is that the contract negotiated at the end of 1928?

A. It is.

Mr. Hurd: I offer in evidence General Motors Exhibit No. 188.

(Said document so offered and received in evidence was marked General Motors Exhibit No. 188.)

Mr. Hurd: I call attention to the similar passages on the front page, General Motors' requirements of Seller's make

of DUX materials, as noted below, and Pyroxylin Finishes including "Duco."

By Mr. Hurd:

Q. What were DUX materials, Mr. Lynah?

A. I don't recall what that designation was, Mr. Hurd.

Q. I call attention to the notation at the bottom of the page that it expired at the end of 1929.

Mr. Lynah, I show you General Motors Exhibit No. 189 for identification.

Is that the next "Duco" contract?

A. It is.

Mr. Hurd: I offer in evidence General Motors Exhibit No. 189.

(Said document so offered and received in evidence was marked General Motors Exhibit No. 189.)

[fol. 2680] Mr. Hurd: I call attention to the fact that it also is not a requirements contract and expires at the end of 1930.

By Mr. Hurd:

Q. Before that expired, had you left General Motors, Mr. Lynah?

A. I left General Motors on September 1st, 1930.

Q. The committee was still in operation at that time?

A. It was.

Mr. Hurd: If the Court please, I offer in evidence the "Duco" contract, General Motors Exhibit No. 190 for identification.

(Said document so offered and received in evidence was marked General Motors Exhibit No. 190.)

Mr. Hurd: I call attention to the fact that it is like the prior three documents. It is not a requirements contract, but merely the requirements of the seller's make, Pyroxylin Finishes, and is a one-year contract.

By Mr. Hurd:

Q. Mr. Lynah, you explained earlier some of the general principles that the Purchasing Committee undertook to follow in placing contracts.

One of them, I believe, was that the Committee would not contract for a product unless it was used by two or more divisions. Was there any departure from that rule in contracting with the du Pont Company?

A. Not if there was any competition available.

Q. Did you make any contract with the du Pont Company [fol. 2681] where only one division was buying material?

A. We did not.

Q. Another principle that you said you followed was contracting only when the item was of substantial volume.

A. That is correct.

Q. Was that principle followed in dealing with the du Pont Company?

A. It was.

Q. Mr. Lynah, will you look at General Motors Exhibit No. 155, which is in evidence. It is Contracts Rejected. You recall that the items underlined with red, you testified yesterday were available from the du Pont Company at the time noted?

A. That is right.

Q. Will you turn to page 5 of that document?

A. I have it.

Q. The item underlined in red, "Photographic Supplies."

A. Yes.

Q. The committee rejected that as a subject for contract. Do you recall the basis for that rejection?

A. There was no volume requirement in the corporation for such supplies.

Q. Well, now, will you turn to page 9 of that same document. There are two items underlined in red. One is "Paint for non-production and maintenance use," and the other is "Floor paint."

What was the basis for those rejections?

A. The requirements were very spotty. The volume was inadequate.

Q. Will you turn to page 10 of that same document underlined in red, "Stripping materials and thinners."

What was the basis for that rejection?

A. The notation here is "Scattered requirements." It [fol. 2682] would fall into the same category; the volume was not sufficiently large.

Q. Now, will you turn to page 13, the first item on that page, "machinery enamels."

A. Spotty requirements and inadequate volume.

Q. Will you turn to page 18?

A. Yes, sir.

Q. "Aluminum Spar Mixing Liquid."

What was the basis for that rejection?

A. I would judge from the notation here, and my recollection, that it was inadequate volume.

Q. Another general principle that you have explained as applying to the work of the Purchasing Committee was that the committee would not enter into a contract unless there was a saving to be gained as a result of it.

Was that principle followed in considering contracts with the du Pont Company?

A. Strictly.

Q. Using this same exhibit, will you look at the first page, "Pyralin." Do you recall the basis for that rejection?

A. I do not recall the specific reason for rejecting it, but under our rules, it would be insufficient volume or no savings.

Q. Will you look at page 3, "Leather substitute," and "Rubber coated fabrics." It has the words, "Cost plus, unsatisfactory."

Do you recall what the incident was that that relates to?

A. I do recall that, Mr. Hurd.

Our divisions at that time were doing their individual buying of leather substitutes and rubber coated fabrics in a competitive market. The du Pont Company representatives felt that if we could agree on a contract under which the raw materials, chiefly cotton fabrics, could be bought on a forward commitment with the cotton mills, or even going back to buying the raw cotton for conversion [fol. 2683] into cotton fabrics so that they might make these purchases at a favorable market period, they could offer lower prices.

The committee decided that was too speculative a method, and the offer was rejected.

Q. Will you look at page 11 of this exhibit, "Denatured Alcohol." Do you find that?

A. Yes, sir.

Q. What was the basis for that rejection?

A. Well, the notation here was "too seasonal." Denatured alcohol was used chiefly as an anti-freeze mixture or item, and the volume was not very large, and seasonal.

Q. How did the seasonal aspect of it enter into the picture?

A. Because it was only used in the wintertime to be put in radiators of cars that were driven away from the factory, chiefly.

Q. Did the prices of the material fluctuate during the year to any degree, do you recall?

A. It was a very fluctuating item.

Q. Will you look at page 13, at the bottom of the page, "Anti-Freeze Material," marked "too special."

What does that indicate?

A. I presume—I don't presume, I know, that it was for the same reason. It was a seasonal item.

Q. Will you look at page 16, the item, "Varnish and Oil Type Materials." Under "Remarks," there is "no savings."

What does that indicate?

A. That means that that proposal was rejected because the prices offered by the du Pont Company showed no savings.

Q. Now, will you turn to the last page of the document, at "Anti-Freeze Methanol." "No price advantage," is [fol. 2684] that another illustration of rejecting the contract because of lack of saving?

A. Lack of saving.

Q. Now, you have testified earlier that where contracts did offer substantial savings, you urged participation in them.

Did you follow that practice with respect to the du Pont contracts?

A. I am sorry, I didn't get your question.

Q. You have testified earlier where the contracts made by the Committee offered substantial savings to General Motors that you urged participation in those contracts, participation by the divisions.

A. I did, specifically.

Q. Did you follow that same practice with respect to the du Pont contracts?

A. I did.

Q. I call your attention to Government's Exhibit No. 494, which is in evidence, which is a letter from you to members of the Purchasing Committee, is that correct?

A. It is.

Q. The date is July 12th, 1928, and I will read the first paragraph:

"There is attached a copy of letter from Mr. Richter of the du Pont Company, showing the volume of purchases by divisions from the du Pont Company for the 12 months ending June 30, 1928. Checks covering the discount earned will be forwarded to each division as promptly as possible from our Treasurer's Department in Detroit."

Then passing down to the paragraph right below the figures:

"It is noted that the super-discount amounts to approximately 2% on the total purchases. It should be [fol. 2685] carefully noted, however, that had total purchases been increased by \$800,000 that there would have been an additional \$100,000 discount, or 12½% of the \$800,000. Had the purchases aggregated \$12,000,000 there would have been a further discount of 15% on the additional \$1,000,000 of business.

"We all agree that it is desirable to maintain some healthy competition. However, if 80% of our purchases of our purchases of material such as the du Pont Company is in position to supply, are given to them on an even basis, the earnings under the super-discount contract will be materially increased, and it is urged that you cooperate to this end.

"We will ascertain from the smaller using divisions the total volume of their purchases of such items and endeavor to gain their cooperation in increasing the volume of such purchases from the du Pont Company in case they are now placing more than 20% of such business outside."

By Mr. Hurd:

Q. What was the occasion for your writing this letter?

A. The reason was to inform the divisions that partici-

pated in the contract of the discounts, and what discounts there would have been had there been additional business in those amounts placed under the contract, with a view to increasing the savings under the contract as much as possible.

Q. Were you undertaking to get business for the du Pont Company?

A. No.

[fol. 2686] Q. Was your sole interest the matter of saving money for General Motors Corporation?

Mr. Harris: I object to the leading question, if your Honor please. The witness has been answering without any help.

The Court: Sustained.

Mr. Hurd: Q. What, if any reason did you have for writing this letter other than the one you mentioned saving money for General Motors Corporation?

A. That was the prime reason, and as I recall, the only reason.

Q. Now, was this effort on your part to obtain participation in the contract unique?

A. It was not.

Q. Was any similar effort made with respect to any other company, any other products?

A. The same effort was made with respect to participation in all quantity discount contracts.

Q. Mr. Lynah, I show you a document that is in evidence as Government's Exhibit No. 499, which is a communication from Mr. Campau to the purchasing agents of the division. Who was Mr. Campau?

A. Mr. Campau was at that time the head of what we called the Purchase Contract Investigation Section which was a section of the staff of the General Purchasing Committee.

Q. Now, I call your attention to a portion of the first paragraph:

"We desire to call your particular attention to the confidential super-discount agreement between ourselves and the du Pont Company. This agreement has been in effect for some time, but starting July 1 of this

year the volume discount brackets have been reduced which should make this new arrangement much more [fol. 2687] profitable to the corporation. During the year ending June, 1938, under the old plan, there was distributed to the divisions a refund of \$200-thousand odd. During the year ending June 30th, 1929, \$379,176.60. For the year ending June 30, 1930, purchases were not sufficient to earn any refund. We believe the year ending June 1928 can probably be considered a normal year, therefore, with the lowering of the volume brackets and by including purchases of the Export Company which have not been included in previous years, our earnings for the period ending June 30, 1931, under this arrangement, should show a very material increase.

"Assuming, therefore, that the du Pont Company is competitive at all times, not only in price but service and quality, a substantial refund can be earned under this new arrangement and greater benefits derived according to the extent of our purchases of du Pont products in question. Your cooperation on this basis, therefore, will help towards a maximum refund."

By Mr. Hurd:

Q. At this time you were no longer with the Purchasing Committee?

A. Not at the time of the date of this letter, sir.

Q. Did you ever send out similar communications while you were active with the Committee?

A. Frequently.

Q. Dealing only with the du Pont Company?

A. Dealing with the holders of all quantity discount contracts.

Q. Mr. Lynah, I show you a document marked for identification as General Motors Exhibit No. 191. That is a letter you wrote to Mr. Richter on the date it bears?

A. I did.

[fol. 2688] Mr. Hurd: I offer in evidence General Motors Exhibit No. 191, and I would like to read the first two paragraphs.

(Said document so offered and received in evidence was marked General Motors Exhibit No. 191.)

Mr. Hurd Reading:

"Your personal letter of June 21st, informing me of the amount of the super-discount is good news.

"I have been much interested in the functioning of this arrangement as I have felt that the super-discount is a distinct saving to us, and I am very much in hopes that the volume of participation will increase during the next year."

By Mr. Hurd:

Q. Mr. Lynah, you testified earlier that another principle followed by the Committee was to have more than one source of supply of one item, unless you had peculiar circumstances that required otherwise.

To what extent was that principle followed in dealing with the du Pont Company?

A. It was followed to the same extent as it was followed with regard to any other items that we purchased.

Q. Do you recall any du Pont product where the Committee made an effort to have competition?

A. Will you please repeat the question?

Q. Do you recall any product made by the du Pont Company with regard to which your Committee, the Purchasing Committee, undertook to have more than one supplier?

A. No.

[fol. 2689] Q. What about "Duco"? Was any effort made to have more than one supplier of "Duco"?

A. Consistent effort was made to have more than one supplier.

Q. Was there any more products you bought from du Pont where you tried to get more than one competition?

A. All products.

Q. Do you recall any specific product?

A. "Duco" thinner was one of them.

Q. To refresh your recollection, did the Committee take any position regarding Fabrikoid or artificial leather?

A. Artificial leather, yes.

Q. What position did they take regarding that?

A. That there should be more than one source of supply.

Q. Did the committee ever contract for Fabrikoid?

A. It did not.

Q. What were the circumstances under which the Committee made an effort to have more than one supplier of Fabrikoid?

A. At the time that question was discussed by the Purchasing Committee, the divisions individually were purchasing a very large portion of their requirements of artificial leather, or imitation leather, from du Pont Company. That information was brought out in the return of a questionnaire to the Committee, and it was in connection with that that the introduction of competition to the extent, I believe, of 20 per cent at least had been brought into the picture.

Q. Mr. Lynah, I call your attention to Government's Trial Exhibit No. 412 which is in evidence. Will you refer to the last page of that document.

Do you find Paragraph "(c) Leather Substitute—Rubber Coated Fabrics"?

A. Yes.

Q. (Continuing):

[fol. 2690] "It was brought out that the du Pont Company has enjoyed the larger portion of General Motors requirements of these items. That on account of constantly increasing consumption, sound judgment demands the maintenance of more than one source of supply. That the du Pont Company has been afforded the opportunity of meeting competitive prices and that competitors now believe that no matter what price they put in they would receive no business.

"It was agreed that on an equal competitive basis at least 25% of the business should be placed with sources other than the du Pont Company. That the du Pont Company be notified that they should make their best price in their initial offer and not count upon having the opportunity to meet competitive prices, and that on the basis of competitive prices the Divisions were free to place their business to the best advantage. Inasmuch as Divisions have no facilities for making complete chemical and physical tests of these items the Factory Section was instructed to immediately install apparatus and equipment. Secretary advised that suppliers of these items would afford representative from the Factory Section every possible

facilities in developing the proper methods and securing equipment necessary for making such tests.

"Secretary was instructed to write Mr. C. L. Petze, Division Manager of du Pont Company relative to decision of the Committee and to send copies to the Purchasing Agents of interested Divisions."

Q. Do you recall who it was that brought up the subject [fol. 2691] or suggested to the Purchasing Committee that there should be more than one supplier of imitation leather and rubber coated fabrics?

A. I did.

Q. Was there any understanding that the du Pont Company would have at least 80 per cent?

A. No.

Q. Was there an understanding that the du Pont Company would have any particular percentage of the business?

A. No.

Q. To whose decision was that left?

A. That was left to the decision of the divisions who bought the artificial leather.

May I add a comment here?

Q. Yes, sir.

A. The last paragraph of that section that you read, regarding instructions to the secretary to write Mr. Petze of the decision of the committee—I would like to call attention to the fact that when any of our suppliers of large items might be concerned with a reduction in the volume of business placed with them, in order to save them from committing raw materials with the thought that they might be continued, that is the suppliers and so forth, their attention was called to that so as to save them from putting in unnecessary inventory of raw materials.

Q. You are referring to the provision that the secretary was instructed to write Mr. Petze of du Pont relative to this decision?

A. Yes.

Q. Was that ever done with any company other than du Pont?

A. It was done with all of the large contractors.

Q. Another general principle that you mentioned as guiding the operations of the Purchasing Committee was that the terms of contract should be kept confidential.

I show you Government's Trial Exhibit Nos. 462, 463, 464, and 465.

[fol. 2692] As to Exhibit No. 462, will you look at the back page of it, find the next to the last paragraph?

A. Yes.

Q. This is a letter from Mr. Allen to you in 1926:

"As explained by me at the time of my discussion with your committee, the success of this plan hinges largely on the ability of the members of your committee to treat the details of this arrangement as a confidential matter between the two companies."

To what extent was that unusual, if at all?

A. That was a very usual thing on the part of all contractors.

Q. The other exhibits that I have handed you all deal with the same subject.

To what extent was your effort to treat du Pont prices confidential different from your treatment of prices of other companies?

A. No different.

Q. Then you had a sliding scale quantity discount contract with du Pont, as you have testified. Was that different from other sliding scale quantity discount contracts?

A. The same type.

Q. You also had a multiple item contract. Was that different from other multiple item contracts?

A. It was not.

Q. Mr. Lynah, after the Purchasing Committee decided to contract for a particular item and had bids from different suppliers, what, if any, tests did it use in determining which supplier to use for its contract?

A. Well, the standard test was quality of products, service, and price.

Q. Were they of equal importance?

A. They were important in the order mentioned.

Q. That is?

A. Quality of product was the first consideration. Service, [fol. 2693] which meant the ability to meet contractual obligations, and so forth, and then price.

Q. Mr. Lynah, do you recall correspondence with Mr.

Briggs of the du Pont-Pathe Film Manufacturing Company while you were with the Purchasing Committee?

A. I do.

Q. I show you documents marked General Motors Exhibits 193 and 194, respectively, and ask you if that is the correspondence to which you refer? .

A. That is.

Mr. Hurd: I offer in evidence General Motors Exhibits Nos. 193 and 194.

(Said documents so offered and received in evidence were marked General Motors Exhibits, 193 and 194.)

Mr. Hurd: I would like to read them.

Exhibit No. 193 is a letter from Mr. Briggs, sales manager of the du Pont-Pathe Film Manufacturing Corporation, to Mr. Lynah, director of purchases, dated May 16, 1928:

"Dear Mr. Lynah:

"I understand that the Rothacker Film Company of Chicago is making pictures from time to time for General Motors. We are wondering if there is not some way that we can get you to specify the use of du Pont film. Both our negative and positive film is being used in large quantities by practically all of the large producing companies, the product to you as being equal to the best on the market.

"We have taken this matter up with the General Motors Office here in New York and they have advised [fol. 2694] us that your office handles all matters of this kind. We will be glad to give you any further information that may be desired in case you can see your way to cooperate with us.

"We will appreciate any assistance you may give us in this matter."

Your reply dated May 18, 1928, to Mr. Briggs:

"With reference to your letter of May 16th, informing us that the Rothacker Film Company of Chicago is making pictures from time to time for General Motors, and raising the question whether in some way or other you can get us to specify the use of du Pont films, I advise that such pictures as the Rothacker Company

may be making are for our individual units and if you ascertain the names of these units you might properly take the matter up with them.

"It is my belief that the present time Chevrolet, and possibly Olds, are the only units having motion pictures made, and I believe that the concern making the pictures handles its purchase of films independently.

"In the making of our purchases, we believe that each transaction should stand on its merits and we presume that the company buying films for our use is guided by this same principle and that if the quality of your product and service, consistent with prices quoted, are the best he can obtain, he will buy from you."

[fol. 2695] By Mr. Hurd:

Q. To what extent did the Purchasing Committee follow the principle that you have outlined in your last paragraph?

A. That was our guiding principle.

Q. Did you depart from it on any occasion?

A. Not to my recollection.

Q. Did you ever depart from it in dealing with the du Pont Company?

A. Never.

Q. Mr. Lynah, you have told us you retired in 1930. What was the occasion for your retirement?

A. Well, Mr. Hurd, I had reached the mature age of fifty, and my home was in the deep South. My father, who was eighty years old was still living. I had two married daughters living in the South, and I had acquired some old rice plantations that I wanted to get back on and do a little hunting and so forth, and it seemed an opportune time to do it.

Q. Did you subsequently come out of retirement for any purpose?

A. Well, in 1935, the trustees of Cornell University invited me to come back there as Chairman of their athletic board, as director of athletics, and to reorganize their student recreation program, and the intercollegiate athletic program. I had been an athlete when I was in college, and it seemed to offer a good interlude in my retired life, so I went

back there and was there for five years, until 1940, when the National Defense Advisory Commission came into being in Washington, and Mr. Knudsen, who had gone down there from the presidency of General Motors to be head of the production division of the Defense Commission, and Mr. E. F. Johnson, who was another former associate in General Motors, asked me to come down and work with them, [fol. 2696] chiefly to utilize my experience in the powder business for the du Pont Company in World War I.

I went down there the first of July, 1940, as assistant director of the small arms, ammunition, and explosion section of the production division that was headed by Mr. Knudsen.

When I got down there, I found that Mr. Knudsen had offered to loan me to Mr. Donald Nelson who had just been appointed by the National Security Organization, approved by President Roosevelt, as coordinator of National Defense purchases. Mr. Nelson asked me to come into his office to organize the specification division, which I did, for two months; and rendered a report to him. I then went back with Mr. Knudsen as assistant director of small arms, explosive and ammunition section, and continued in that office for several months, and to be perfectly frank, I could not work myself into the dilly-dilly atmosphere in Washington at that time, so I got a leave.

After we entered the war, I went with the J. G. White Engineering Corporation in New York as general manager of their overseas division, which had been organized to build and operate repair bases behind our lines for the repair of heavy ordnance and trucks and other such equipment.

It was quite evident to us in the beginning that such an operation should be conducted by the armed personnel of the Army, because all of these proposed plant locations or sites would be in territory pretty close to enemy lines, and the use of civilians in that work was very questionable. I think we were very instrumental in persuading the Ordnance Department that those bases should be operated by uniformed personnel.

[fol. 2697] Mr. Harris: If your Honor please, I have not interrupted, but I think this is entirely irrelevant. There

seems to be no relevancy. I was waiting for Mr. Lynah's reference to his going back to General Motors.

The Court: I have lost track of the question.

Mr. Hurd: I asked him what his activities were, and his qualifications, to bring it down to date.

The Court: He may answer, in a general way.

The Witness: I had nearly finished, your Honor.

From that activity, I went back South and became general manager of a Liberty Ship building yard at Brunswick, Georgia, and after that, I went back to the farm.

By Mr. Hurd:

Q. About when was that?

A. That was in 1943 or 1944.

Q. Have you had any connection with athletics since leaving Cornell?

Mr. Harris: I object to that, if the Court please.

Mr. Hurd: It is merely a part of his general background.

The Court: It is a part of his experience.

Mr. Harris: He is not being qualified as an expert on anything, I submit, your Honor.

Mr. Hurd: It is a part of his qualifications, if the Court please.

The Court: All right, he may proceed.

[fol. 2698] The Witness: A. In 1948 I was appointed Chairman of a panel of the National Collegiate Athletic Association to investigate violations of their so-called sanity code, which was set up to eliminate and control, as much as possible, the subsidization of college athletes.

That is all.

By Mr. Hurd:

Q. Have you had any connection with the du Pont Company since 1930?

A. No, sir.

Q. Or any connection with General Motors Company since 1930?

A. Yes. For a period of nine months in South Carolina, I had charge of one of their sales districts for the Buick, Olds, and Pontiac cars.

Q. About when was that?

A. That was from October, 1932, when the depression was well under way, until August, 1933.

Q. Just one other question, Mr. Lynah.

Did you testify before the Grand Jury that investigated this case that preceded the institution of this case?

A. I did.

Mr. Hurd: If the Court please, that completes the direct examination of Mr. Lynah.

Mr. Harris: Does the Court desire to recess before the cross examination?

The Court: I have an appointment at 3:30. I would prefer to continue until 3:30.

Mr. Hurd: If the Court please, I overlooked one exhibit, General Motors No. 192, that I would like to show the witness and have it offered and received in evidence, if the Court please.

By Mr. Hurd:

Q. Mr. Lynah, will you tell us what GM Exhibit No. 192 represents?

A. This exhibit represents a report that the General Purchasing Committee staff made at regular intervals to the General Motors operating divisions showing their participation in general contracts, and showing the overall participation in general contracts, and the amount of discount, quantity discount, earned under each contract.

Q. Was this the only such document that you made up?

A. This one exhibit?

Q. Yes.

A. So far as I know, it became the standard practice.

Mr. Hurd: I offer in evidence General Motors Exhibit No. 192.

I would like to call attention to a few of the items. It is dated October 31, 1927, and it is entitled "Performance of Quantity Discount Contracts."

It lists a number of companies, and shows the date of the contract, and shows the purchases in dollars that had been made under the contract.

It shows the annual rate of purchases continued at the current rate. It shows what the total annual amount must be to reach the top maximum percentage, and shows what

the discount is, and then it shows what the actual savings have been to date, and what they will be if the present annual rate is continued, and it shows the total amount of the discount if the purchases equal the point where the maximum discount applies.

[fols. 2700-2709] In the last column, the figures show what the discount will be if the maximum is reached.

I just call the Court's attention to a few. The second item is the contract with Russell Burdsall & Ward. Total discount at the maximum rate would be \$112,000.00.

With the Lamson & Sessions Co., would be \$112,000.00; with the Hamilton Press & Machine Co., would be \$45,000.00.

Going down to the third from the bottom, with the Wire Wheel Corporation, the savings would be \$96,000.00.

On the back page, Trico Products Company, the savings would be \$25,000.00, and the last item the du Pont savings would be \$64,000.00.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 192.)

at Cross-examination.

By Mr. Harris:

[fol. 2710] Now, carry on to page 15. This is Allen talking—

A. Near the top of the page?

Q. That's right, sir.

A. I have it.

Q. (Reading):

"I offered to cooperate with them in every way to enable them to decide for themselves the proper time at which to make these contracts, giving them the benefit of all of the information which we have as to the probable cause of the cotton market, and I am confident that even though they decide to place 20 per cent of their business with our competitors, there will be no question about our securing the remaining 80 per cent."

And as a matter of fact that is about the way it worked out, isn't it?

A. I don't know because the divisions bought these items for themselves.

Q. Didn't you testify just a few minutes ago that in [fols. 2711-2712] Fabrikoid you looked about for a second source and gave 20 per cent to the second source, or did I misunderstand you?

A. We advocated a second source of supply, or other sources of supply, let's put it that way, that would receive at least 20 per cent of the business, but there was no obligation to place 80 per cent of it with any one supplier.

Q. Was 80 per cent placed with any one supplier?

A. I don't know.

Q. You have not had occasion in getting ready for this appearance on the witness stand to check over the sales, have you, in connection with these different contracts that you talked about?

A. To check over the sales?

Q. The sales, whether when you gave a contract, we will say, for 75 per cent of the requirements, you sold 75 per cent of the requirements? Did you go into that?

A. We tried to write the contracts, if they were quantity discount contracts, up to the maximum percentage, but we did not make these contracts for artificial leather.

Q. No, I understand that. I am asking you whether you know that 80 per cent of the contract went to one supplier, and 20 per cent to a competitor, whether you know that.

A. I do not know.

[fols. 2713-2714] Q. Now, I call your attention to Government's Exhibit No. 415, which has not previously been offered in evidence but which, by agreement of counsel, is introduced at this time.

(Said document, so offered and received in evidence, was marked Government's Exhibit No. 415.)

[fol. 2715] Q. Now, I would like to show you Government's Exhibit No. 416, which has not previously been offered in evidence, but which, by agreement of counsel, is introduced at this time.

(Said document, so offered and received in evidence, was marked Government's Exhibit No. 416.)

Have you got it? This is two days after the one we have just read. It is dated October 18, 1923, and it is from Mr.

Allen to Mr. Sloan, and he says to Mr. Sloan, regarding Fabrikoid and Rubber-coated Fabrics:

“***I quite appreciate your position and that of the individual units in this matter, but think that the whole subject presents opportunities for an improvement in the relationship of the two companies”...

What would he mean by that?

A. I wouldn't know.

Q. (Reading):

“and that some scheme of genuine cooperation might be worked out whereby each company would benefit.”

Does that give you an idea what he means?

A. That was a happy thought, but I don't know just what he contemplated.

Q. It wouldn't mean, would it, that the arrangement that he was trying to sell to General Motors, that General [fols. 2716-2722] Motors should give du Pont their entire requirements instead of 80 per cent was what he called “cooperation”?

A. Mr. Harris, I don't feel qualified to interpret these letters written by others where I am not even concerned directly or just in this manner.

Q. You would think, would you not, that it does refer to purchasing and sale of Fabrikoid? You could go that far with me, couldn't you?

A. In cases of this kind I don't believe I should think. I believe I should know.

Q. Well, do you know?

A. I don't know.

Q. Now, I am going to call your attention to Government's Exhibit No. 494. You just looked at that earlier in the afternoon, I believe.

This is a confidential letter, or whatever it is, a confidential communication by James Lynah to a number of people who you testified were heads of divisions and so forth, and it is about the discount, and I call your attention, as counsel did, to the last paragraph but one:

“We all agree that it is desirable to maintain some healthy competition. However, if 80 per cent of our

purchases of material such as the du Pont Company is in position to supply, are given to them on an even basis, the earnings under the super-discount contract will be materially increased, and it is urged that you cooperate to this end."

What does "cooperate" mean there?

A. Cooperate means there that they place the maximum possible of their purchases under the 80 per cent against the contract in order to get the benefit of the quantity discount.

Q. As a matter of fact, it is asking them, is it not, Mr. Lynah, to give 80 per cent of their requirements to du Pont?

A. It could be so interpreted.

[fol. 2723] Q. Was there any specific difference, Mr. Lynah, between a contract which called for requirements and which called for requirements of seller's make?

Now I am asking you whether there was any particular difference in practical operation of those contracts?

A. There was.

Q. Would you say that a contract which called for requirements of seller's make, and was on this list that we are coming to, would often not get any purchases from the unit involved?

A. Now, when you say "the unit involved"—

Q. Well, the one that is purchasing.

A. Participation in those contracts was optional by every division of the corporation.

Q. And that would go, would it, if the contract said "all requirements?"

A. No, if the contract said "all requirements," then requirements of whatever items that were covered by that contract should go to the contractor.

Q. And if it said, "all requirements" of seller's make, [fols. 2724-2727] what then was the effect?

A. Well, if a division wanted to buy a piece of equipment or material of other seller's make, he was not bound under that contract with the particular specified holder of the contract.

Q. But if he wanted the seller's make mentioned in the contract, he must use a general contract; and its terms, must he not?

A. I think I don't understand that, sir.

Q. I say, if he wanted to buy the seller's make, something of the seller's make, he would have to buy it in accordance with the general contract?

A. He would specify under that contract, yes.

[fols. 2728-2744] Q. That cumulative quantity discount, I believe you told us, some time after it had been introduced; it ran for a number of years?

A. I think it ran out in about 1928 or 1929.

Q. You were still with the General Motors, weren't you?

A. I was.

Q. Could you tell us after this cumulative discount had served its term, what percentages you gave to competing suppliers other than your principal one? I am not speaking of du Pont at all. I am speaking of other products.

A. Mr. Harris; there were other considerations than price, quantity and so forth. Unless a product was of a mechanical nature that was easily standardized, and so forth, or where it was a material that required uniformity, at least where uniformity played an important part in its fabrication in our plant, it was desirable for the divisions to get their material supplies from as few sources as possible.

Q. Take steel. What did you do about steel?

A. Steel of course, was made to chemical analysis, and with the exception of heat treatments, and so forth, could be bought generally at fairly uniform quality.

Q. When you were purchasing steel, it was divided among a number of principal suppliers, wasn't it?

A. Three, or two with a percentage of requirements open to divisions.

[fol. 2745] Q. Now, we will come to the contracts, Mr. Lynah. And you will just keep General Motors Exhibit Nos. 167, 179, 185, and 186, there, Mr. Lynah.

A. I have them in numerical order, sir.

Q. Thank you, sir.

Calling your attention to 167, that was the contract of the 2nd of January, 1925, and that was for buyer's requirements.

As I understood your testimony, that meant that all of the pyroxylin finishes, including "Duco" and "Duco" thinner, would be bought from du Pont?

A. That is correct.

Q. And under the rules that we have referred to and read, if a general contract was in existence such as this was, the divisions were required to buy under these terms from this supplier; that is true, isn't it?

A. That is true.

Q. General Motors Exhibit No. 179 calls for 100 per cent of buyer's requirements and 50 per cent or more of Fisher Body's requirements.

Why was the Fisher Body requirements only fifty per cent under the du Pont contract?

A. At that time the Fisher Body Corporation was not a wholly owned division of General Motors, and we had to sell them on the desirability of participating in this contract on the basis of the prospective saving in quantity discount.

Q. They bought the other fifty per cent elsewhere, didn't they?

A. At their option.

Q. Well, they did buy it elsewhere?

A. I don't know.

[fol. 2746] Q. I call your attention now to Exhibit No. 185, and that is a contract dated the 1st of January, 1926, and that is for buyer's requirements of seller's manufacture of certain items, and I also call your attention to Exhibit No. 184.

Do you have that?

A. No, sir, I don't have No. 184.

Q. That is a contract also dated the 1st of January, 1926, and that is for 100 per cent of buyer's requirements for domestic plants, and 50 per cent or more of Fisher Body.

That is the same situation, isn't it?

A. That is correct.

Q. Now, let's come to the next one, first, Exhibit No. 186, and that is the 1st of January, 1927, buyer's requirements of seller's make, and there apparently the Fisher Body people are included, are they not, there being no exception?

A. Well, there being no exception, except under a contract of that nature, the purchasing division would only buy under the contract the make of product that the contractor supplied.

In other words, participation in a contract of that character was optional.

Q. Now, in 1927, could any of the General Motors Divisions buy "Duco" elsewhere than from du Pont?

A. Well, now, by "Duco" you include pyroxylin finishes—you mean pyroxylin finishes?

Q. No, sir, I mean exactly what I am talking about.

A. "Duco" was a trade name.

Q. I say, could any of the General Motors Divisions buy any "Duco" elsewhere than from du Pont in 1927?

A. There was no approved competitive source.

Q. So that if this contract reads that, "Buyer's require-[fol. 2747] ments of seller's make of pyroxylin finishes, including 'Duco' and 'Duco' thinner," they could only get that material from du Pont, could they not?

A. They could only get that material that had been approved by the regular channels through which such a proposal—

Q. Well, I am asking you under this particular contract, "Duco" was certainly approved, wasn't it, in 1927?

A. Yes.

Q. Well, could they get any "Duco" elsewhere with this contract in force?

A. No, I want to stipulate there that by "Duco" you mean the du Pont brand of pyroxylin finish.

Q. By "Duco" I mean the "Duco" which is mentioned in the contract. I know nothing about any other "Duco." "All standard shades, maroon, five gallon cans, \$6.00 per gallon, striping 'Duco,' 'Duco' thinner."

Now, this is mentioned in the contract, and I am asking you whether under this contract, this contract being in effect, the Divisions could buy this material elsewhere than from "Duco"?

A. No.

Q. I call your attention now to GM 187. This is a contract in 1928, first day of January, and it is one of your buyer's requirements of seller's make, pyroxylin finishes, including "Duco."

Would you give the same answer that under this contract when it was in force, the divisions of General Motors would buy and were required to buy all of their "Duco" and striping "Duco" from du Pont?

A. They were expected to buy, yes.

Q. That was the rule, wasn't it?

A. That was the rule.

[fols. 2748-2753] Q. Now, I call your attention to Government's Exhibit No. 495.

Government's Exhibit No. 495 is dated July 10, 1928, and it is a letter from Mr. William Richter, General Manager, directed to Mr. James Lynah.

What was Mr. Richter the general manager of?

A. Mr. Richter was general manager of the Cellulose Products Division.

Q. Of du Pont?

A. Of the du Pont Company.

Q. I notice he sends copies to the various directors of purchases of the different divisions or companies of General Motors. You will note that at the bottom. Right?

A. Mr. Harris, the copies were either sent direct from Mr. Richter or to the divisions through my office. I don't recall.

Q. All right, sir. Now I am calling your attention to the first paragraph with respect to the "Confidential Super-discount plan in effect between our company and the General Motors Corporation, we are pleased to enclose herewith our check for \$200,136.79, representing the discount earned on total purchases by your company of \$10,201,094.33 for the twelve months ending June 30, 1928."

You would say, would you not, from those figures that the divisions did purchase their requirements from du Pont for "Duco" and other things?

A. I would say a substantial part of their requirements.

Q. Would you know where else they got it over and above that \$10,000,000.00?

A. I would not.

Q. That would be about, wouldn't it, what they would buy from du Pont and from any other company for the type of material that du Pont produced and furnished?

A. That I don't know.

[fol. 2754] Q. Yes, I will reframe it. What is an allied company to General Motors from which General Motors bought supplies of any nature?

A. An allied company, as I recall the use of the term, was a company that was partially owned, but not wholly owned.

Q. Could you give us any one of those companies by name, from which you bought supplies that was in that category?

A. The Fisher Body Corporation at one time was an allied company.

Q. What would you buy from Fisher Body?

A. Bodies.

Q. Oh, yes, that is probably so. I wonder if you could give me somebody else from whom you could buy paints and varnishes or soda or white lead, and things like that?

A. So far as I know, General Motors had no allied companies of that nature.

Q. Would you say when, in the contract briefs, they are referring to allied companies, that the du Pont Company would be an allied company?

A. Of General Motors?

Q. Yes.

A. No.

Q. Let us see, then, I am reading now from the briefs of the various contracts of this meeting of February 6, 1925, to the General Purchasing Committee, and it is page No. 2. The paragraph in question is paragraph 2:

“Purchases from outside companies obtainable from allied companies—”

[fol. 2755] By Mr. Harris:

Q. Now, just what does that mean?

A. That means that we had a number of accessory divisions and parts divisions making products that were used by the General Motors Corporation. In order to keep all of those operations on a competitive basis, they were required to in their sales, and they had to sell to the car divisions of General Motors Corporation.

In other words, the car divisions were not required to take the products of those divisions just because they were accessory groups of the corporation.

These groups were required to sell in competition, and there were times when the car divisions bought from outside suppliers items that could be supplied by these accessory or parts divisions of the corporation.

Q. So you say now, Mr. Lynah, that an allied company was a subsidiary of General Motors?

A. That would be my understanding of an allied company.

Q. Why would you say—

A. I don't know just how that term was used there or why that term was used, but it would indicate some relationship in ownership of the corporation.

Q. You would expect, would you not, that the word "subsidiary" would be used, or "parts company" would be used?

A. Subsidiary is another term that does not imply a wholly owned corporation.

Q. We may get some light on it later. In case we do, I will, at least, read into the record this particular paragraph:

"Purchases from outside companies obtainable from allied companies.

"Circular letter has been addressed to all purchasing agents requesting report on G.M.E. 55—"

[fol. 2756] That was one of your forms of contract or report forms?

A. I would take it so, yes.

Mr. Harris: (Reading)

"—covering every purchase of materials from outside companies obtainable from allied companies be made. It was decided that these reports should be summarized, and reviewed by the committee at its meeting. The divisions have been requested to send in a list of all products manufactured by them, the parts they manufacture and the service capacity for manufacturing parts."

By Mr. Harris:

Q. Now, what divisions are they, are they car divisions or parts divisions?

A. That would be parts and accessory divisions, Mr. Harris, and they must be the divisions that were referred to in there as "allied companies."

I do not recall any allied company except, perhaps, Fisher Body Corporation.

Q. They would hardly be referring to bodies in this paragraph?

A. No.

Mr. Harris: (Reading)

"Study will be made to arrive at a method of determining how much lower the price the successful outside company must be than the price of the allied company bidding in order to justify placing the business outside. Due consideration is being given to the unabsorbed burden where such sales are lost to allied companies."

[fols. 2757-2809] By Mr. Harris:

Q. What is the unabsorbed burden?

A. Well, the burden in any manufacturing operation is the fixed charges over which the cost of production has to be spread. The larger the volume of business of a manufacturing company is, the more product it has to absorb that burden, which is really a fixed charge.

Q. You would not say, would you, that what has been known as a member of the du Pont-General Motors family was an allied company?

A. No, in no sense of the word.

Q. As a matter of fact, however, it was your practice, was it not, Mr. Lynah, to find out from competing companies, including the competing companies of du Pont, what the going prices were; that is so, isn't it?

A. We got that information on bids requested on general contract proposals.

Q. Yes, and when you got those bids, except in certain instances which we have already gone into, you would show them to du Pont, wouldn't you?

A. We, in the General Purchasing Committee staff, never did business that way.

Q. Du Pont—

A. So far as we were concerned, prices were confidential. The price of every bidder was confidential, and no other bidder was permitted to see that price.

Q. Would you say that the du Pont Company was not permitted to meet the bids of other people outside of the 75 or 80 per cent that was going to du Pont?

A. So far as General Motors Purchasing Committee staff was concerned, they never were permitted. I cannot answer for the divisions.

Q. In fact, when it came down to that, that would not be within the Purchasing Committee's competence, would it?

A. Of the divisions.

[fol. 2810] Q. I call your attention now, Mr. Lynah, to a letter of August 13, 1924, from Mr. Sloan to you concerning the relations between the Fisk Rubber Company and the du Pont Company.

A. May I have the number?

Q. Government Exhibit No. 536. I am sorry.

"It appears that some time ago, Mr. Pickard, Vice President in Charge of Sales of the du Pont Company got in touch with Mr. Swayne to see if Mr. Swayne knew anybody in the Fisk Rubber Company."

By Mr. Harris:

Q. Who is Mr. Swayne?

A. Mr. Swayne was at that time a Vice President at Large with General Motors. I think he was generally known as Vice President in charge of transatlantic trips.

Mr. Harris: (Reading)

"There followed a meeting here in Mr. Swayne's office in which the du Pont people and the Fisk people got together and following that a very valuable business has been given to the du Pont interest by the Fisk people. [fols. 2811-2817] "The principle in General Motors is that each proposition should stand on its own foundation and, as I said before and repeat it to emphasize the point, we are not suggesting that any exception be made in this case but simply to let the Committee know that this has taken place, in the line of general information."

By Mr. Harris:

Q. Would you say that is approval or disapproval of the practice of telling one of your suppliers that the du Pont Company was an investor?

A. I do not think I can answer that. This transaction had nothing to do with any General Motors information.

Q. Well, wouldn't you say—

A. I take it at the time you were getting to the point that Mr. Swayne got into the picture.

Q. It looks like it. May I ask you this question?

A. At the time, on August 13, 1924, was General Motors buying to any extent tires from the Fisk Rubber Company?

A. I believe not.

Q. What would be the point then of Mr. Swayne introducing someone to the du Ponts from the Fisk people?

A. I don't know, unless the Fisk people hoped to get the General Motors tire business.

Q. Didn't you, in 1924, get tires from Fisk and Goodrich and Goodyear?

A. Mr. Harris, the purchases of tires was done by the individual divisions.

Q. Then you don't know, do you, whether General Motors was buying from the Fisk Rubber Company?

A. No, but I know enough of the makes of tires that went on our cars and from general information to know they were not.

[fols. 2818-2819] Q. Did you have occasion to read the annual report of 1918, the time that the investment was made by du Pont in General Motors? Did you ever have occasion to read that?

A. I couldn't say that, Mr. Harris.

Q. Can you state whether or not there was any feeling in the General Motors Company that if you could do anything for du Pont, it should be done, other things being equal?

A. Mr. Harris, my first experience with that kind of thing, when I went with General Motors, was a feeling of resentment on the part of many of the General Motors division people, particularly the purchasing agents and others who were afraid that there might be an effort to centralize General Motors organization on the same scheme of organization under which the du Pont Company operated.

That resentment, the overcoming of that resentment, became quite a problem.

Q. It was overcome, wasn't it?

A. To what extent, I don't know. So far as the cooperation in my work was concerned, I think it was pretty well overcome.

Q. Was it fairly frequent, Mr. Lynah, for one or the other of the du Ponts to interpose in action of your committee?

A. Never.

[fol. 2820] Redirect examination.

By Mr. Hurd:

Did the du Pont Company endeavor to change the action that your Purchasing Committee had taken with respect to reciprocity?

A. Never.

Q. Mr. Lynah, going back to some of the matters covered earlier in the cross examination, I first want to call your attention to General Motors Exhibit No. 149, which is the revised plan for co-ordination of purchases, dated September 1, 1923.

Will you turn to page 12 of that document, please?

A. I have it, sir.

Q. Paragraph No. 12, first sentence I wish to read, deleting some of the parenthetical clauses which have no bearing on the question I am going to ask:

"Provided it is necessary in order to secure the lowest possible price to obligate the corporation to take a specific amount of material from any supplier, such contract can only be entered into with the approval of the Finance Committee."

At any time while you were connected with the Purchasing Committee, was the Finance Committee consulted for consent to enter into any contract?

A. It was not. There was no occasion for it.

Q. Did you report to the Finance Committee in any respect as to what contracts you proposed to enter into?

A. We did not.

[fol. 2821] Q. Did you report to them with respect to any contracts that you did enter into?

A. We did not.

Q. At any time did you consult the Executive Committee with respect to any contract?

A. There was one occasion. The Executive Committee had passed a resolution, which had been sent to the General Purchasing Committee, that commitments should not be made for a period in excess of twelve months.

There was one occasion, I believe I mentioned it previously in my testimony, where the proposed contract with the Aleuete-Zerk Company for lubricating fittings, which were standard on all General Motors cars, and I believe throughout the automobile trade.

There was no competition in that field, and permission was asked of the Executive Committee to conclude a two-year contract. That permission was granted.

Q. Did you ever consult the Executive Committee for permission to enter into any contract that did not exceed one year?

A. We did not.

Q. Did you advise the Executive Committee as to the contracts that you proposed to enter into?

A. We did not.

Q. Did you advise them of the contracts that you did enter into?

A. We did not.

Q. Mr. Lynah, I would now like to call your attention to Government's Trial Exhibit No. 463, which is a document that was shown to you this morning by Mr. Harris.

This is a letter from Mr. Allen of the du Pont Company to you, dated September 23rd, 1926. It deals with the subject of the multiple item discount contract that you entered into with the du Pont Company.

[fol. 2822] Will you turn to the back side of the document, the first full sentence:

"It is obvious that we would be unable to continue this arrangement unless we can secure much higher prices from our other customers."

Mr. Lynah, was it unusual for a supplier to tell you that you were getting better prices than anyone else?

A. That was very frequently done, Mr. Hurd. That was one of the stock things to be expected.

Q. Was it only the du Pont Company that told you such things, made such statements?

A. I can unqualifiedly say that that kind of statement was frequently made by respective suppliers.

Q. Now I want to call your attention to Government's Trial Exhibit No. 462, which is another one of the letters dealing with this same multiple product discount contract.

Will you turn to the third page, please.

A. That is the page numbered 3? These documents are confusing because the page numbers are sometimes in the middle of a sheet.

Q. It is the third page, with the 3 down at the corner, just above a tabulation.

A. Yes, I have that.

Q. Calling your attention to the tabulation at the bottom of this third page, you were asked this morning, I believe, by Mr. Harris, as to whether or not the scale of discounts set forth at that point was followed in a contract with any other supplier.

A. Not a similar scale of discounts.

Q. You previously testified that you had entered into many multiple item contracts. Am I correct in that?

A. Correct.

[fol. 2823] Q. Did any two of them have the same scale of discounts?

A. Not that I recall.

Q. Now I want to call your attention to General Motors Exhibit No. 186, which is a contract between General Motors and the du Pont Company for pyroxylin finishes, dated January 1, 1927.

Paragraph 1 states that it is buyer's requirements of seller's make of pyroxylin finishes, including "Duco" and "Duco" thinner.

I believe you have testified that this is the first "Duco" contract that was for requirements of seller's make. Was any company making "Duco" or "Duco" thinner other than the du Pont Company?

A. No. That trade name was a du Pont Company name. There were no other suppliers making "Duco" or offering it to the trade under the name of "Duco."

Q. Under this contract did you consider that any of the divisions were required to buy anything from du Pont?

A. Not unless they wanted to—no, they were not required to. The participation in this contract would be optional.

Q. Did that apply to Fisher Body as well as to the other divisions?

A. Any of the divisions.

Q. This contract did not require that Fisher Body purchase anything from du Pont?

A. Correct.

Q. If any division wanted to buy a pyroxylin finish product of the du Pont Company, was there any place that the division could buy it except from the du Pont Company, even if you didn't have that contract?

A. Unless it was from a distributor of "Duco."

[fol. 2824] Q. The du Pont Company, or one of its distributors?

A. Yes.

Q. There was no place that anyone could buy du Pont pyroxylin finish except from du Pont or one of its distributors?

A. Not to my knowledge.

Q. So that this contract did not change the situation from what it was before you had any contract, except to the extent that if a division wanted to purchase a product from du Pont it could get the benefit of the prices that were set out here?

A. That is right.

Q. I think you have testified that this contract was not a requirements contract due to the fact that competitive products, competitive pyroxylin finishes, had at this time been approved by the Paint and Enamel Committee and Research Corporation?

A. Correct.

Q. Did the Purchasing Committee enter into any contract with any of the competitive pyroxylin manufacturers?

A. So far as we know the divisions were using different—the divisions who were not participating in this contract, or who did not participate in the contract, were using competitive makes, different makes. No division that we knew of was using common makes, makes common to two or more suppliers, that would make a general contract under our practice of two or more divisions having to use a common product, before it became a problem for the General Purchasing Committee.

Q. You testified earlier that one principle that the Committee followed was that it would not contract for the item unless that item was being used for two or more divisions?

A. Correct.

[fol. 2825] Q. Was there any competitive make of pyroxylin-finishes that came within that principle, while you were with the Committee, as far as you know?

A. Evidently not to the knowledge of the Committee.

Q. And that is, or is that not, the reason that the Committee did not enter into any contract with any competitive manufacturer of the finishes?

Mr. Harris: I object to that, if the Court please. He said it did not come to the knowledge of the Committee.

The Court: Well, it could have come to his knowledge.

Mr. Harris: I assume it is addressed to him as a committeeman.

The Court: No, I think he may answer that.

Overruled.

The Witness: Will you please repeat the question?

The Court: The reporter will read the question.

(Question read.)

Mr. Harris: Do I understand that that is the Committee, that that is the Committee action that is being asked for?

The Court: Either way.

Mr. Harris: If Committee action is what he is asking for, he already said that it did not come to the knowledge of the Committee that they were using these finishes.

Mr. Hurd: My point is that the witness has testified that the Committee could not contract for it unless two or more were using it, and he said that they did not know that two or more were using it.

[fol. 2826] Now I want to know that the fact that they did not have any information that at least two were using it, whether that was the reason or not the reason that they didn't have a contract.

The Court: I think he may answer it.

By the Witness:

A. Yes.

By Mr. Hurd:

Q. Well, which is it? I have got the question both ways. Is that it, or is it not, the reason?

A. Yes, that is the reason.

Mr. Hurd: That is the trouble; if I ask the question in proper form, it is ambiguous.

Q. Now, Mr. Lynah, I also wish to call attention to Government's Exhibit No. 468. You testified that in 1927 the contract did not require anyone to buy anything because it was merely the requirements of the seller's make, unless they bought the seller's make they didn't have to buy.

Now, I want to call your attention to Exhibit No. 468, the first paragraph. This is the du Pont report for the month of January, 1927, the same month the contract is dated:

"On our 1927 contract with General Motors we are unable to get any definitely specified amount of business in the contract. Last year we had a provision in the contract giving us all the General Motors business with minimum of 50% of the Fisher Body purchases of pyroxylin materials. In the 1927 contract General [fol. 2827] Motors agree only to purchase their requirements of our make of pyroxylin materials which, of course, may be as little or as great as they care to purchase from us."

Do you consider that that is a correct interpretation of the contract?

A. I do.

Q. Mr. Lynah, this morning Mr. Harris called your attention to Government's Trial Exhibit No. 407 which was a letter from Mr. Coyne to Mr. Pierre du Pont regarding the Chevrolet top business.

The second paragraph stated:

"Further statement was made that Mr. Knudsen had gotten your permission to give 25 per cent to our competitors, the O'Bannon Corporation, which is in the hands of a receiver."

Did you ever ask permission of Mr. Pierre du Pont to give business to a competitor of the du Pont Company?

A. At no time.

Q. Did you ask Mr. Irene du Pont?

A. At no time.

Q. Or did you ask Mr. Lamont du Pont?

A. At no time.

Q. Did you ever ask any representative of the du Pont Company for permission to give business to du Pont competitors?

A. Absolutely not.

Q. Did anyone ever tell you that you were supposed to favor the du Pont Company?

A. No one ever did.

Q. Did anyone ever tell you that you were supposed to do business with the du Pont Company?

A. No.

Q. Did anyone ever tell you that because the du Pont Company owned stock in the General Motors that they were [fols. 2828-2830] entitled to have business from General Motors?

A. I don't recall that, but I should say no.

Q. Did anyone ever tell you that it was the policy of General Motors to favor the du Pont Company in any respect?

A. No.

Q. Did anyone ever tell you that it was the policy of the du Pont Company to favor General Motors in any respect?

A. No.

Mr. Hurd: Thank you.

Mr. Harris: Nothing further, your Honor.

[fol. 2831] ALFRED P. SLOAN, called as a witness on behalf of the defendants, having been previously duly sworn, resumed the stand and testified further as follows:

Direct examination (continued).

By Mr. Hurd:

Q. Mr. Sloan, last Tuesday we dealt with General Motors Exhibit No. 19 which is now in evidence, listing the membership of the Board of Directors on various dates.

I call your attention to the fact that as of May, 1923, there are ten names in the last column, that is, "Others," ten directors other than management directors and other than representatives of the du Pont Company.

On the inside of the document under date of December 31, 1942, there are only three in that column marked "Others." That is also the case in 1949; and then on the last page, I call your attention to the fact that in the last column there are six directors under the heading "Others." [fol. 2832] Now, Mr. Sloan, will you tell us to what extent, if any, the matter of adding to the Board of Directors who are neither management directors nor representatives of the du Pont Company, was a problem that you dealt with during the last ten years?

A. Well, during the last ten years, Mr. Hurd, looking over the record, I became concerned with the fact that the changes of time had reduced our outside representation to the number indicated on the exhibit here. I felt very strongly that a corporation of the importance of General Motors should have representation by directors who were successful men, respected in the community, outstanding citizens, and other necessary qualifications in order to give a better balance to our Board of Directors.

Therefore I gave some thought to it in the last ten years, beginning probably around 1945 or something like that.

Q. Mr. Sloan, I show you two documents marked General Motors Exhibits Nos. 11 and 12 for identification, and ask you if those are copies of letters which you received on or about their respective dates from Mr. Walter Carpenter?

A. As I testified yesterday or before in a related matter, it was my policy in all matters in the corporation—that included the management directors—to discuss the problem with my immediate associates, and with the important directors in this case, to present an idea and to seek their cooperation in developing the idea, and these letters here to which you refer indicate that the subject was under discussion back in 1943.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibits 11 and 12.

[fol. 2833] The Court: They are received.

(Said documents so offered and received in evidence, were marked General Motors Exhibits Nos. 11 and 12.)

By Mr. Hurd:

Q. Mr. Sloan, I call your attention to the fourth page of General Motors Exhibit 11. Will you tell us whether any of the individuals named on that page ever became directors of General Motors Corporation?

A. No, they did not.

Q. Now, will you refer to page 5 and tell me whether any of those individuals ever became a director of General Motors Corporation?

A. There is one there, Mr. Hurd. Mr. Alexander became a director of General Motors seven or eight years after this letter was written.

Q. And at whose suggestion was he brought on the Board when he was added?

A. At my suggestion, at the time the event took place, although his name was in this list.

Q. Now, will you turn to the next page, page 6, and tell us whether any of those individuals ever became a director of General Motors?

A. Mr. Douglas became a director.

Q. Is he the one on that page?

A. That is correct.

Q. Did he become a director at the time of the suggestion by Mr. Carpenter, or was it a later date?

A. Some years after, Mr. Hurd.

Q. Do you recall at whose suggestion that was?

A. I think it was mine.

Q. Will you look at the seventh page, and tell us whether either of those individuals ever became a director of General Motors?

A. They did not, Mr. Hurd.

[fol. 2834] Q. Will you give us the same information regarding the names on page 8?

A. No, no name on page 8 became a director.

Q. What about page 9?

A. Mr. Mellon became a director in some seven or eight years, as near as I can recall.

Q. After the date of this letter?

A. That is right.

Q. Do you recall the circumstances of his coming on the Board?

A. Mr. Mellon became a very large stockholder in Gen-

eral Motors around the time he became director, or shortly before that, and he was invited on the Board for that reason, as well as for other reasons,—principally because he was a large stockholder.

Q. Do you recall at whose suggestion he was added?

A. To the best of my recollection, it was Mr. Donaldson Brown who recommended Mr. Mellon as a member of the Board of Directors.

Q. Will you turn to the last page, Page 10. Will you tell us whether any of those individuals ever became a director of General Motors Corporation?

A. Mr. Copeland became a director and Mr. Echols became a director. They were representatives of the du Pont interests on the General Motors Board.

Q. Did the other individuals named on the page—

A. No, no other names on that ever became directors of General Motors.

Q. Now I ask you to look at General Motors Exhibit No. 12, pages 2 and 3. With the exception of the last name on page 3, I believe all the names contained in this exhibit were also listed in General Motors Exhibit No. 11.

[fol. 2835] Will you look at the last name, Mr. S. Sloan Colt. Did he ever become a director of General Motors Corporation?

A. He did not.

Q. Mr. Sloan, I now show you Government's Exhibit No. 207, which is in evidence.

Is that a letter which you wrote to Mr. Carpenter in reply to General Motors Exhibits Nos. 11 and 12?

A. Yes, it appears to be, Mr. Hurd.

Q. I call your attention to the first page of the letter, next to the last paragraph:

“I will use the following formula, and for the following reasons:—

“First: Frankly, I am opposed, and others are likewise, to further representation on the Board, of Bankers.”

Turning the page:

“Second: I think we should give some consideration to geographical location, and your list of April 8th, which I have referred to above, is set up on that basis.

"Third: I think we must be careful to exclude those who represent interests that have relationship with General Motors, particularly in the buying and selling area."

Will you explain the basis for that test?

A. I didn't get the last question.

Q. Will you explain the basis for your question in paragraph "third"?

A. Paragraph third—well, what I meant by that is that I feel that if an individual has a large stockholder interest in the corporation, that he is entitled to representation on [fol. 2836] the Board of Directors, if he is invited to serve.

The fact that he is a supplier, I don't think that should interfere with that, providing he is a large stockholder. I think the large stockholder interest, the ownership of property, entitled an individual to serve on the Board in order to take part so far as it is proper for him to do so in the management of that property.

Q. In the event he is not a large stockholder and is a supplier, what is the basis of your objecting to him?

A. If he is a large stockholder and not a supplier, did you say?

Q. If he is not a large stockholder, but is a supplier.

A. I wouldn't think then that he would qualify unless he had other qualifications that would justify him being on the Board. I feel that the qualifications of representatives on the Board should be their ability to contribute to the welfare of the business. I put that very high, and I think that other things should take a secondary position.

Therefore, if an individual is an outstanding citizen, a man of experience, and so forth, I would waive the stockholder qualifications, and I would accept him on the Board, even if he were a supplier.

For instance, in my own case, I feel that I am entitled to a directorship in General Motors because I am a very large stockholder. I am also a director in another corporation which is a supplier of General Motors, and I don't think that this disqualifies me in view of my large stockholding interest in General Motors.

Q. Going to Paragraph 4:

"I will eliminate representatives of du Pont and du Pont affiliated companies, because I believe that you

[fol. 2837] should determine what representation you want on the General Motors Board."

Have you always followed that same proposition?

A. We have always followed that. Any recommendation that they made as changes developed over the years have been accepted, and they have been elected to the Board.

Q. As far as representatives of that company are concerned?

A. That is correct.

Q. (Reading): Fifth:

"I shall avoid making more than one recommendation from the same line of industry."

"Sixth: I will ignore the holdings of General Motors Stock, as an essential qualification."

What was your understanding of that last proposition?

A. I think it speaks for itself, Mr. Hurd. For instance, we have two members of our Board now who are outstanding citizens—General Clay, who was former military governor of Germany, and Mr. Douglas, who is an outstanding citizen, formerly ambassador to Great Britain, and they have practically no stockholdings at all.

I think they would contribute and do contribute importantly to the corporation, and I think that from my point of view is the outstanding qualification.

Q. Mr. Sloan, I now show you Government's Exhibit No. 1236, which is in evidence. It is a letter to you from Mr. Lammot du Pont, dated December 18, 1944.

I call your attention to the third sentence in the second paragraph. This all relates to Bernard Peyton.

The second paragraph, about half way down:

[fol. 2838] "Bernard is a Director, Vice-President and Treasurer of the New York Air Brake Company. I understand his managerial activities are in the manufacturing or operating side. His previous experience was as the active head of a comparatively small company, manufacturing locomotive stokers."

"As the New York Air Brake Company seems to be a company of some \$20,000,000.00 assets and doing an annual business of about the same amount, his business

experience seems to have been in activities of substantial importance."

In the last page, second paragraph:

"Bernard is now about forty-five years of age, I think, but appears to be considerably older than that. I wonder if this would be a suggestion for consideration from the standpoint of Directorship in General Motors."

Do you recall receiving this letter?

A. I recall that letter.

Q. I now show you Government's Exhibit No. 1237, which is a letter from you to Mr. Lammot du Pont, dated December 29, 1944.

Is that your reply to Mr. du Pont's letter we have just referred to?

A. Yes, that is the reply I wrote to Mr. Lammot du Pont in reference to the letter you just handed me.

Q. Will you turn to the last page, the last paragraph:

"How would you suggest I proceed? If you wish me to I will be glad to make some inquiries and see if I can get any further information, but in view of the fact that you know him, what more is needed? If you take [fol. 2839] that position and will let me know, we could have his name go before the Board at the January or, perhaps better, the February meeting, whichever appeals to you as desirable."

By Mr. Hurd:

Q. Will you explain what your understanding was of that statement?

A. What I meant by that is when I read the letter, Mr. Peyton's qualifications appealed to me as those of one that I wanted to have on our Board of Directors.

In fact, Mr. Lammot du Pont had vouched for him, and it seemed to me that was all-important. However, I testified here that no member went on the Board of Directors unless I submitted his name and had it considered by the group as a whole, which I would have done in this case. I cannot remember just what I did about this, whether I

went ahead with it or whether I dropped it. The fact is Mr. Peyton was never a member of the Board of Directors of General Motors.

Q. You said the fact that Mr. Lammot du Pont vouched for him was of significance. In what respect was it of significance?

A. Because his endorsement was the endorsement of a man of experience and ability. I would have done the same thing if Mr. Whitney had endorsed him or anybody else in whom I had confidence.

Q. Mr. Sloan, I now show you a document marked General Motors Exhibit No. 13 for identification, which is a letter from you to Mr. Carpenter, dated August 15th, 1944. If the Court please, that is under the heading Selection of Directors, all of these exhibits.

The Court: No. 13.

[fol. 2840] Mr. Hurd: This is No. 13, yes.

By Mr. Hurd:

Q. Will you look at the document, please, Mr. Sloan. Now, this letter refers to Dr. Karl T. Compton, Lewis W. Douglas and Calvin P. Bentley. Did Mr. Compton become a director of General Motors?

A. Yes, Dr. Compton became a director, and is now a director of General Motors.

Q. At whose suggestion was he added?

A. He was my nominee. I am a graduate of MIT, and I have great admiration of Dr. Compton's accomplishments.

Q. I believe you already testified that Mr. Douglas became a director. What about Mr. Bentley?

A. He never became a director, Mr. Hurd.

Q. Was he ever suggested to the Board as a candidate for director?

A. Mr. Bentley, no.

Q. Whose decision was it not to submit his name?

A. I guess it was my directive, because I had the leadership of the problem.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 13.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 13.)

By Mr. Hurd:

Q. Now, Mr. Sloan, do you recall having some correspondence with respect to General Marshall?

A. I do.

Q. I show you Government's Exhibit 220, which is a letter from you to Mr. Carpenter, dated December 10, 1945. Do you recall sending that letter to Mr. Carpenter?

A. Yes, I recall it.

Q. Who was suggesting General Marshall?

[fol. 2841] A. Mr. John Pratt, Vice President—no, he was not vice president at that time. He had retired from General Motors, but he was a director.

Q. What was your position with respect to that suggestion?

A. I submitted it to the group which was in accordance with my regular practice, and the general feeling was that in view of the fact it took so long to become acquainted with the affairs of the corporation, and General Marshall, although he was a man of outstanding experience in certain things, was really too far along to be elected to the Board, so far as age was concerned, and also, if I recollect, some of the group felt he did not have business experience essential for a member of the Board; as he was up to that time entirely an Army officer.

Q. Do you recall what your feeling was, in that regard?

A. I subscribed to that feeling, and I did not recommend him to the Board.

Q. Now, I show you what has been marked General Motors Exhibit No. 14 for identification. Is that a letter that you received from Mr. Carpenter?

A. Yes, sir, I recall the letter, Mr. Hurd.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 14.

(Said document so offered and received in evidence, was marked General Motors Exhibit No. 14.)

By Mr. Hurd:

Q. Mr. Sloan, will you note the first paragraph, which states:

“Regarding our chat the other day, I am noting below three names. I am not urging strongly that any one

[fol. 2842] of them be presented, but rather am I sending them along to add to your galaxy for consideration—

“The first one is Mr. Robert Woodruff. He is the head of the Coca-Cola Company.”

Did Mr. Woodruff ever become a director?

A. He did not.

Q. If you will turn to the next page, second full paragraph:

“Another name that we might consider is that of John Hanes. He is a member of that important group down in the Carolinas. There are several brothers, I believe. One of them is Robert Hanes who is the banker.”

Did Mr. Hanes ever become a director of General Motors?

A. He did not.

Q. Then next to the last paragraph:

“Another name which occurs to me is that of Brehon B. Somervell.”

That is General Somervell, as I recall. Did he become a director?

A. He did not.

Q. Now, Mr. Sloan, are you a director of the du Pont Company?

A. Yes, sir.

Q. When did you become a director of the du Pont Company?

A. Shortly after I became president of General Motors, probably in June, 1923.

Q. Have you attended the meetings of the du Pont Board of Directors regularly?

A. I am afraid, Mr. Hurd, more often not.

Q. What generally takes place at the Board of Directors [fol. 2843] meetings insofar as your attendance would apprise you? What takes place at the Board of Directors meetings so far as you know from your attendance?

A. The business transacted is in line with the business transacted in all large corporations. The Board acts on re-

ports submitted. It takes action on such legal matters that have to be approved by the Board. The President of the du Pont Company makes a short statement as to the status of the business. At times the executives of the du Pont Company who are not on the Board make statements to the Board. That is about the type of business that comes before the Board.

Q. Did you take any particular part in the activities of the Board meetings?

A. My participation on the Board has been limited to making a few extemporaneous remarks about the position of General Motors in terms of generalities. I have taken no participation in any of the affairs of du Pont except in that area.

Q. To what extent are you given instructions or advice at the Board meetings with reference to the conduct of General Motors affairs?

A. I have never been given any instructions at all, Mr. Hurd. Besides, instructions of that kind are never given to anybody in the Board of Directors meetings.

Q. Do you recall any question coming up at any of the Board meetings dealing with General Motors Corporation?

A. There never was a question came up in that area that I can recall, and I think my recollection on that is reliable.

Q. To what extent was the purchase practice of General Motors discussed at the Board meetings of du Pont which you have attended?

A. My previous answer covers that, that it was never discussed in any shape or way or manner.

[fol. 2844] Q. Mr. Sloan, I show you a document marked General Motors Exhibit No. 15 for identification, and ask you if that is a schedule showing your attendance at the Board meetings of the du Pont company?

A. Of course, Mr. Hurd, I cannot remember all these dates. It is a very complete document. I will take it on its face, as you have probably taken it from the records.

Mr. Hurd: Yes, I will state to the Court this is taken from the records.

By Mr. Hurd:

Q. I will show you General Motors Exhibit for identification No. 16, which is a recapitulation of your attendance

taken from General Motors Exhibit No. 15 for identification.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibits Nos. 15 and 16.

(Said documents, so offered and received in evidence, were marked General Motors Exhibits Nos. 15 and 16.)

By Mr. Hurd:

Q. I would like to call your attention to some aspects of 15, which is broken down by years showing the date when a directors' meeting of the du Pont Company was held, and if Mr. Sloan attended the meeting, the date is followed by an asterisk. So that for the year 1923, there were nine meetings held, and Mr. Sloan attended two. In the year 1924, there were twelve meetings held, and Mr. Sloan attended two. In 1925, he attended one meeting out of twelve. In 1926, he attended one meeting out of twelve. [fol. 2845] In 1927, he attended one meeting out of twelve. In 1928, there were twelve meetings, and Mr. Sloan did not attend any of them. In 1929, he attended one out of twelve. In 1930, there were twelve meetings, and Mr. Sloan did not attend any of them. In 1931, there were twelve meetings, and he attended one. In 1932, he attended one out of twelve. In 1933, he attended two out of twelve. In 1934 he attended two out of twelve. In 1935, he attended one out of twelve. In 1936, there were twelve meetings and he was not in attendance at any of them. In 1937, there were fourteen meetings, and he was not in attendance at any of them. In 1938 he attended two out of twelve. In 1939, out of fourteen meetings, Mr. Sloan attended none of them. In 1940, he attended one out of twelve. In 1941, he attended two out of twelve. In 1943, he attended three out of twelve. In 1944, five out of twelve. In 1945, three out of twelve. In 1946, he attended six out of twelve. In 1947, he attended six out of thirteen, and 1948, he attended four out of twelve.

By Mr. Hurd:

Q. Mr. Sloan, what is the explanation of your having attended more meetings in the last ten years than you did in the prior seventeen or eighteen or twenty years?

A. You see, Mr. Hurd, I retired in 1946, and therefore I was not under the pressure of time. In those early years I was under terrific pressure in General Motors, and I couldn't take the time. There is no significance to the record except as to that.

Mr. Hurd: In respect to General Motors Exhibit No. 16, which is the recapitulation of 15, I would like to call to [fol. 2846] the attention of the Court the fact that Mr. Sloan attended none of the meetings for five years. He attended only one meeting in eight years, and the average is less than two a year.

The Witness: I may say, Mr. Hurd, that I am not proud of that record as a director.

By Mr. Hurd:

Q. Mr. Sloan, turning to another subject, do you recall an incident in about 1928 with respect to Mr. John Raskob's position in General Motors?

A. I do.

Q. What was that incident?

A. That incident relates to the political campaign of 1928 when the late Governor Smith was running for president. Mr. ~~Pierre~~ du Pont and Mr. Raskob had been very much concerned with the impact of prohibition upon our society—put it that way—and Mr. Pierre du Pont had organized an activity to bring the problem to the consciousness of the American people.

He became very much interested in the matter, and when the election came up in 1928, Governor Smith took a position against prohibition, against the Prohibition Act, and he was a close friend of Mr. Raskob's, and as a result of that association, when the late Governor Smith was nominated as a presidential candidate in the Democratic Party, Mr. Raskob and Mr. Du Pont supported him, and Governor Smith asked Mr. Raskob to head the campaign and he became Chairman of the National Democratic Committee.

In the years just previous to that, Mr. Raskob had become the self-appointed spokesman of General Motors Corporation. I put it that way because he was Chairman of the Finance Committee, and the earnings of the corporation were increasing very rapidly, and the stock was advancing

[fol. 2847] in the market, and you will remember it was a time of considerable speculation, and Mr. Raskob was issuing statements to the financial press and so forth, so they came to look to him as the spokesman for General Motors. The management of General Motors, particularly myself, felt that it would be very unsound for an individual who was managing a political campaign to continue as spokesman of General Motors.

We felt that it put General Motors in politics, and we had worked very hard to get General Motors where it was. We were selling to the ultimate consumer, and the campaign was quite an important one, so far as the psychology of it was concerned, and we felt that it was unfair to the management for Mr. Raskob to take that position.

Mr. Raskob differed with us, and we simply said that he couldn't continue with General Motors, and he should retire, if he wished to continue to manage Governor Smith's campaign, and as a result of that discussion and the position that the management took, Mr. Raskob retired from the corporation as Chairman of the Finance Committee.

Mr. Pierre du Pont, who was Chairman of the Board of Directors of General Motors at that time, took the position that Mr. Raskob's feeling that he should serve in both capacities were perfectly sound, and if we insisted upon Mr. Raskob's retirement he himself would retire and we did insist upon it, and he retired as well as Mr. Raskob.

Q. Mr. Sloan, to what extent was your position based upon the fact that Mr. Raskob was the chairman of the Democratic Party, rather than the Republican Party?

A. Well, we had a divided house on that account, Mr. Hurd. We had Democratic representatives on top management, [fol. 2848] as well as Republican. For instance, Mr. Knudsen who was an important executive at that time, and was general manager of our largest division, was a Democrat; Mr. John Pratt was a Democrat; Mr. James Mooney, in a very important executive position, in charge of our overseas operation—he was a Democrat; Mr. John Thomas Smith who was our chief counsel in the organization was a Democrat.

I don't know if there were any more Democrats or not, but the point I want to make is that we had a divided house

on the political question. It was not a question of partisanship, Mr. Hurd, it was a question of principle:

I don't believe a corporation should permit itself to get into politics, and that is all there is to it.

Q. Well, was the fact that he was representing one party rather than the other—

A. That had nothing to do with it at all. I would have felt the same about it exactly, if the political side of it had been reversed. It was particularly important to us because the consumer can discriminate very easily against General Motors products. That was the danger, outside of the broad principle involved.

Q. When Mr. Wilson was appointed Secretary of Defense, what, if any, position did you take?

A. We took exactly the same position.

Q. And he retired from the company?

A. He retired completely from the company, the corporation.

Q. Mr. Sloan, I show you a document marked General Motors Exhibit No. 17, and ask you if that is the letter that you wrote Mr. Irene du Pont regarding this Raskob incident?

A. Yes, I recall that letter.

Q. Is General Motors Exhibit No. 18 for identification, [fols. 2849-2850] Mr. Irene's reply?

A. Yes, that is Mr. Irene's reply to my letter.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibits Nos. 17 and 18.

(Said documents, so offered and received in evidence, were marked General Motors Exhibits Nos. 17 and 18.)

[fols. 2851-2852] By Mr. Hurd:

Q. Do you know what the other resignation was that Mr. Irene referred to?

A. The only other resignation involved in the episode, Mr. Hurd, was Mr. Pierre du Pont's, that I have dealt with already.

Mr. Hurd: (Reading)

"Not that anyone blames him for wishing to 'let down', but the step is because of loyalty to a friend

rather than necessity of the case. Perhaps no one could influence him more than John Raskob, himself, for he at least cannot be considered selfish by advocating a withdrawal of the communication."

If the Court please, I also offer in evidence General Motors Exhibits Nos. 19 and 20, which are an exchange of correspondence between Mr. Coleman du Pont and Mr. Pierre S. du Pont.

(Said documents, so offered and received in evidence, were marked General Motors Exhibits Nos. 19 and 20.)

[fol. 2853] By Mr. Hurd:

Q. Mr. Sloan, I show you Government Trial Exhibit 188, a letter from Mr. Lammot du Pont to you, dated December 24, 1928.

I would like to call your attention to the first paragraph:

"Dear Alfred:

"I had a long talk with John Raskob last Thursday and with Pierre on Friday and have definitely come to the conclusion that there is no hope of inducing either of them to return to their former positions with General Motors. I don't think it is necessary to go into the reasons for my arriving at this conclusion or for their taking the stand which they appear to me to take. You have urged from time to time that something should be done in the matter, and I am convinced that the time to act has arrived, so that henceforth you have my full support in this matter."

Mr. Sloan, after this date did Mr. Pierre du Pont ever return as Chairman of the Board of General Motors?

A. No, he did not.

Q. Did Mr. Raskob ever return as Chairman of the Finance Committee?

A. He did not.

Q. Mr. Sloan, I now turn to another subject, that is, the membership of the top committees in the General Motors Corporation.

First, the Executive Committee which was in existence [fol. 2854] until May, 1937. I show you a document which has been marked General Motors Exhibit No. 21 for identification, and call your attention to the date of May 10, 1923.

That is the date of your becoming president of General Motors?

A. I believe it is, Mr. Hurd.

Q. I call your attention to the names of the people on the Executive Committee of that date: Haskell, Sloan, P. S. du Pont, Raskob, F. J. Fisher and Mott.

Then in the year 1924 you will note that Bassett, Brown, C. T. Fisher, L. P. Fisher and Pratt were added.

Q. At whose suggestion were those gentlemen added to the Executive Committee?

A. They were added at my suggestion. I was president at that time, and I was also Chairman of the Executive Committee. It would be my responsibility to make recommendations, although the suggestions might come otherwise, but generally the suggestions came from me. These particular ones came from me.

Q. Then if you will drop down to 1929, Mr. P. S. du Pont resigned, and Mr. Knudsen and Smith were added. At whose suggestion were Knudsen and Smith added?

A. My suggestion.

Q. 1930, Mr. Lammot du Pont was added. Whose suggestion was that?

A. Again at my suggestion.

Q. Was this the point at which Mr. Lammot du Pont became Chairman of the Board?

A. No, he became Chairman of the Board in the latter part of 1928, perhaps early in 1929; I think in 1928.

Q. That was after the resignation of Pierre du Pont?

A. Correct, Mr. Hurd.

Q. As of this date, 1930, can you tell us how many representatives of the du Pont Company were on the Executive Committee?

A. In 1930?

Q. Yes.

A. I haven't got the list before me, but at that time Mr. Lammot du Pont was the only representative of the du Pont Company on the Executive Committee.

Q. Then I call your attention to 1934, when Mr. Bradley was added. At whose suggestion was Mr. Bradley added?

A. My suggestion. Mr. Bradley was a very important executive on the financial end of the business. He is now Chairman of the Financial Policy Committee.

Q. The same year, Mr. Lammot du Pont resigned. After his resignation, how many representatives of the du Pont Company were on the Executive Committee?

A. Nobody.

Q. In 1935, Mr. Grant, Mr. Mooney, Mr. Hunt, and Mr. Wilson were added. At whose suggestion were they added?

A. At my suggestion. They were all operating people.

Q. At the bottom of the page, under date of May 3, 1937, there is set forth the personnel of the Executive Committee at the time that it was terminated. How many representatives of the du Pont Company were there on the Executive Committee at that time?

A. There were no representatives of the du Pont Company at that time.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 21.

(Said document so offered and received in evidence was marked General Motors Exhibit No. 21.)

By Mr. Hurd:

Q. Turning to the Finance Committee, Mr. Sloan, I show you a document that has been marked General Motors Exhibit No. 22 for identification. It contains similar information regarding the membership of the Finance Committee.

It shows the personnel as of May 10th, 1923, when you became president of the corporation. Will you tell us how many representatives of the du Pont Company there were on the Finance Committee as of that date?

A. There were six.

Q. Who were they?

A. I have not included in that, Mr. Hurd, Mr. Brown, because the way we looked upon him was as operating executive with General Motors. He spent his entire life with General Motors, but he came from du Pont in the early days and that question comes up. If you include him as an

operating executive of General Motors, which I contend you should, there would be six members.

Q. Who are the representatives of the du Pont Company that you have included in that six?

A. Mr. Pierre, Mr. Raskob, Mr. H. F. du Pont, Mr. Irene, Mr. J. A. Haskell, Mr. Lamont du Pont.

Q. That is six out of a total of eleven?

A. That is right.

Q. In 1924, this document shows Mr. F. J. Fisher and Mr. Whitney were added. At whose suggestion were they added?

A. Mr. Fisher was added at my suggestion. I don't remember just who did suggest Mr. Whitney, Mr. Hurd.

Q. Will you turn to the year 1925. It shows Mr. Morgan added. At whose suggestion was he added, if you recall?

A. I don't recall. I might presume, Mr. Hurd, that it was Mr. Raskob as he was chairman of that committee at that time, and would naturally make such a recommendation.

Q. In 1927, Mr. Carpenter was added. Do you recall at whose suggestion that took place?

A. I don't recall who recommended him.

[fol. 2857] Q. After Mr. Raskob resigned, who became chairman of the Finance Committee?

A. Mr. Donaldson Brown.

Q. In 1929, it shows that Raskob was returned to the Committee and that Mott was added. At whose suggestion was Mr. Raskob brought back as a member of the committee?

A. At my suggestion. Likewise the same answer to Mr. Mott.

Q. In 1933, Mr. Bradley was added. At whose suggestion was that?

A. I don't know, Mr. Hurd. I don't remember whether it was Mr. Brown or myself. It was one or the other of us.

Q. Now, if you look at the list at the bottom of the page, bearing the makeup of the Finance Committee as of the time it terminated, will you tell us how many representatives the du Pont Company had there at that time?

A. There were five apparently members of the Finance Committee at that time who represented the du Pont Company.

Q. Would you name them, please?

A. Mr. P. S. du Pont, Mr. Raskob, Mr. H. F. du Pont, Mr. Irene du Pont, Mr. Lammot du Pont.

Q. Over in the righthand column, you see the name of Carpenter.

A. Oh, yes, Mr. Carpenter.

Q. Was he a representative of the du Pont Company?

A. Did I say five? Apparently there were six.

Q. There should be six out of a total of fourteen?

A. That is right.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 22.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 22.)

[fol. 2858] By Mr. Hurd:

Q. Turning now, Mr. Sloan, to the policy committee. That was the top committee during the period from 1937 to 1946, I believe you testified?

A. That is correct, Mr. Hurd.

Q. I show you a document marked General Motors Exhibit No. 23 for identification, which purports to show the makeup of the Policy Committee during its existence.

Will you look at the names appearing under the date of May 3, 1937, and tell us how many representatives of the du Pont Company there were on the committees as of that date?

A. Two: Mr. Carpenter and Mr. Lammot du Pont.

Q. How was the makeup of the Policy Committee determined at its origin?

A. You will recall, as I testified here before, there was a great deal of discussion with regard to the plan that went into effect at this time. Naturally it carried with it a discussion of the best selection of those who should serve. Out of that discussion came this list. It was not a list that any one person picked out. It comprised the judgment of the group as a whole that these particular individuals had served the corporation in this particular capacity the best.

Q. Under date of 1940, this exhibit shows Mr. Hunt was added. At whose suggestion was he added to the committee?

A. Mr. Hunt was added at my suggestion. He was a

very important executive in the technical area. He was at that time a top executive, a top technical executive.

Q. And calling your attention to the date of June 3, 1946, which is the last date of the operation of the Committee [fol. 2859] tee, the names under that date, will you tell us how many of the men on the Policy Committee were representatives of the du Pont Company when the Committee terminated?

A. Mr. Carpenter, Lamont du Pont—two out of nine.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 23.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 23.)

By Mr. Hurd:

Q. Now, Mr. Sloan, turning to the Operations Policy Committee, I show you a document marked General Motors Exhibit No. 24 for identification, purporting to set forth the personnel of that Committee from its origin in June, 1946, to date.

Looking at the names appearing under the date of June 3, 1946, will you tell us how many of the members of the Operations Policy Committee at its beginning were representatives of the du Pont Company?

A. There were no representatives of the du Pont Company on the Operations Policy Committee at that time, and it may save time by my testifying to the fact that there never have been any representatives of the du Pont Company on the Operations Policy Committee in the history of the Operations Policy Committee from June 3rd, including today.

Q. How were the original members of the Committee selected?

A. They were selected by recommendation of the president of the corporation, Mr. Wilson. He, in administering the business, recommends the advancement of the executives, and when they reach the point where they [fol. 2860] are eligible for the Operations Policy Committee, and he thinks they should serve, we go over them together, and I recommend them to the Board of Directors in such cases—I don't consult with other members of the Board

as I do in a normal case because these men serve only because they are operating people, and they are to serve on the Board in order that the authority that the Board gives to the Operations Policy Committee may be preserved under Delaware law.

Q. Will you look at the date of 1948, Mr. Sloan.

You see Mr. Burke and Mr. Godfrey were added. At whose suggestion were they added?

A. The president of the corporation.

Q. Under date of 1951, Gordon, Kindl, Klingler, Osborn and Skinner. At whose suggestion were they added?

A. The recommendation of the president of the corporation.

Q. That is Mr. Wilson?

A. Mr. Wilson.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 24.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 24.)

By Mr. Hurd:

Q. At the time the Operations Policy Committee was formed, you also formed a Financial Policy Committee, did you?

A. That's right.

I show you a document marked General Motors Exhibit No. 25 for identification, which purports to be a list of the members of the Financial Policy Committee from its origin in 1946 to date.

[fol. 2861] Looking at the list under date of June 3, 1946, will you tell us how many representatives there were on the Financial Policy Committee at that time representing the du Pont Company?

A. There appears to be only one, Mr. Carpenter, but that gets us into the position of Mr. Brown.

If you include Mr. Brown who was retired at that time, in that case there would be two members of the Financial Policy Committee who might be considered representatives of the du Pont Company.

Q. That is two out of the nine?

A. That's right, two out of the nine.

Q. And in 1947, Mr. Echols was added. At whose suggestion was he added?

A. He was a du Pont representative.

Q. Do you recall who suggested him?

A. I think they must have suggested him. It might have been Mr. Bradley who was Chairman of the Committee. I cannot recall, to be sure, Mr. Hurd.

Q. Mr. Sloan, I will show you Government's Exhibit No. 228, which is in evidence, which is the letter from you to Mr. Carpenter.

I call your attention to this exhibit. It is dated September 30, 1947, and I call your attention to the top of the second page, the statement, "Technically, you already have two members—Don and yourself, but Don is not active in the du Pont organization and perhaps you might think you would rather have somebody who was more active.

"For instance, Echols, or perhaps Henry du Pont."

Do you recall that letter? Does that refresh your recollection as to who suggested Mr. Echols?

A. Apparently it does.

Q. What is your recollection?

A. I recollect that letter, and that he substituted on the committee some years afterwards.

Q. Now, referring again to General Motors Exhibit No. 25 for identification, the year 1949 shows Mr. Carpenter resigned and Mr. Copeland was added.

At whose suggestion did Mr. Copeland come on the Financial Policy Committee?

A. I think that must have been a recommendation of the du Pont Company. Mr. Copeland was a du Pont executive.

Q. In 1950 Mr. Alexander was added. At whose suggestion was Mr. Alexander added?

A. Mr. Bradley asked that Mr. Alexander, who in the meantime became director, become a member of the committee.

Q. In 1951, Mr. Curtice was added. At whose suggestion was that done?

A. That was at the suggestion of Mr. Wilson. Mr. Wilson was the only operating man on the Financial Policy Committee. He could not be at all the meetings. It was thought wise to add Mr. Curtice to give a broader basis for discus-

sion of such problems in which the operating manager was involved, therefore Mr. Curtice was added to the committee.

Q. In 1952, Mr. Clay was added. At whose suggestion was that done?

A. General Clay was recommended by Mr. Pratt. You notice that Mr. Pratt retired at the same time, and he suggested that Mr. Clay substitute for him, and come on the Board and be added to the Committee, and that was done in January, 1952.

Q. Then will you look at the list at the bottom of the page showing the current makeup of the committee, and tell us how many representatives there are of the du Pont Company?

A. Mr. Copeland, Mr. Brown and Mr. Echols.

Q. Including Mr. Brown as a du Pont representative.

A. There would be three.

Q. Three out of a total of ten?

A. That is correct.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 25.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 25.)

By Mr. Hurd:

Q. Mr. Sloan; I wish to turn to a new subject, the subject of reciprocity. Are you acquainted with the term reciprocity?

A. Do you mean the technical definition or a practical definition?

Q. What is your understanding of the term as used in business?

A. Well, the technical definition is mutual action and reaction. I suppose from a business point of view, you get something and you give something. That is about the best definition I can offer, Mr. Hurd.

Q. As used in business, as businessmen understand the term, how would you give us a practical definition?

A. I would say if you buy from me, I will buy from you. That perhaps expresses it a little better.

[fols. 2864-2866] Q. Do you recall to what extent, if any, reciprocity was in the practice of business in the 1920's?

A. Well, I cannot answer that, specifically, except in a very general way. My impression is that it was quite generally used in that time area.

Q. Did General Motors have occasion to look into the subject?

A. No, we did not look into it at all on our own account. We never believed in reciprocity, and were dead set against it, all of us were.

Q. By all, who do you mean?

A. The whole management.

Q. Mr. Sloan, I show you two documents, one marked General Motors Exhibit 66 for identification, and the other 67 for identification, dealing with correspondence between yourself and Mr. Ingals on the Central Tube Company, and yourself and Mr. Knudsen. Do you recall that correspondence?

A. Yes, sir, I recall that.

Q. Looking at General Motors Exhibit No. 67 for identification, the last paragraph, will you tell us whether or not that expresses your attitude towards reciprocity?

A. It does express my attitude.

Q. To what extent has that been your attitude throughout the years?

A. My attitude has not changed over all the years.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibits Nos. 66 and 67.

[fol. 2867] By Mr. Hurd:

Q. Now, Mr. Sloan, do you recall that the subject of reciprocity came before the General Purchasing Committee of General Motors?

A. I do.

Q. What were the circumstances of that subject coming up, and about when was it?

A. To the best of my recollection, Mr. Hurd, it came up two or three times, and the General Purchasing Committee passed resolutions or adopted a policy against reciprocity. They took the same position that I did in the letter you just read.

Q. Do you recall who it was that brought up the subject?

A. Well, I may have to be corrected on this, Mr. Hurd,

but my best recollection is that it came up in two ways. One was that the members of the Purchasing Committee were being solicited by representatives of the du Pont Company to give them information involving reciprocity, and they refused it, and said it was against General Motors policy.

Then another incident was, there was a man named Kerr in the du Pont Company. He was promoting reciprocity from the du Pont point of view, and according to my best recollection, he took it up with me at the request of somebody of the du Pont Company, perhaps Mr. Irene du Pont, and I think I referred that to the General Purchasing Committee because I had no jurisdiction as such over it.

That is my best recollection.

Q. I show you, Mr. Sloan, two documents, Government's Trial Exhibit No. 531 and Government's Trial Exhibit No. [fol. 2868] 532. No. 531, while it does not appear on the document is, I understand, a letter from Mr. Pierre du Pont to you. It is dated April 7th, 1924.

A. This refers to the Kerr episode I just testified about.

Mr. Hurd: I would like to read, if the Court please, this Government's Trial Exhibit No. 531, which I believe is a letter from Pierre du Pont to Mr. Sloan.

"I am informed that a number of companies have established a file on reciprocity and that this file is continually referred to in placing orders in order to insure that as much trade as possible is thrown to those who use the product of the corporations in question. The other day one of our representatives was with the Bethlehem Steel people and happened to see their file card in which they classified du Pont and General Motors as one. The du Pont Company is now looking into the advisability of establishing a system of this kind, and Mr. George Kerr has already carried out the preliminary work. I should be glad to have him explain the details to General Motors people, if you approve."

And your reply, Government's Trial Exhibit No. 532:

"I have your letter of April 7th and will be glad to have Mr. Kerr send me a memorandum of what he has

in mind. I certainly think this is a very constructive thing to do."

[fol. 2869] By Mr. Hurd:

Q. What is your understanding of what you are referring to in the last sentence:

"I think this is a very constructive thing to do."?

A. It is always constructive, Mr. Hurd, to listen to anybody who has got a proposition. You do not have to agree to it. When that came in, I was diametrically opposed to reciprocity. I still am, but still, I have the additional responsibility to listen to what Mr. Kerr had to say.

Q. Did you confer with Mr. Kerr?

A. I believe I did. I believe he sent me a memorandum.

Q. I believe you said you referred the matter to the General Purchasing Committee?

A. My best recollection is that I sent it to the General Purchasing Committee because I had no jurisdiction as such in the matter. I delegated that authority to them.

Q. I show you a document marked General Motors Exhibit No. 68 for identification, and ask you if that contains the statement as to the position taken by the General Motors Purchasing Committee at that time?

A. This appears to be an extract from the minutes that refers to the letter of April 30th from Mr. Kerr to myself, which recites the policy of the General Purchasing Committee with respect to that.

[fol. 2870-2871] ADJOURNMENT

[fol. 2872] The Court: Proceed.

ALFRED P. SLOAN, JR., called as a witness on behalf of the Defendants, having been previously duly sworn, resumed the stand, was examined and testified further as follows:

Direct examination (Continued)

By Mr. Hurd:

Q. Mr. Sloan, at the conclusion of the session yesterday, I was showing you a document marked General Motors Exhibit No. 68 for identification:

Is that the resolution that was adopted by the Purchasing Committee in July of 1924?

A. As far as I recollect, it is, Mr. Hurd.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 68, and I should like to read it.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 68.)

Mr. Hurd: This is from the minutes of the General Purchasing Committee held July 2, 1924, under the subject, "Reciprocity":

"Letter of April 30 from Mr. G. H. Kerr of the du Pont Company to Mr. Sloan suggesting advantages to be gained through tabulating the suppliers to and the quantities of purchases made by General Motors Divisions for use in securing sales on a reciprocity basis was read. A discussion of this matter emphasized the fact that the products of our business go largely to individuals. While it is recognized that there are cases [fol. 2873] which might be profitably dealt with on the reciprocity basis, there are so many complications and difficulties involved in attempting to treat the situation as a whole, it was agreed best to stand on our own equities and require our suppliers to do so. Divisions of course are at liberty to treat individually such cases as any situation might require."

By Mr. Hurd:

Mr. Sloan, following this resolution of July, 1924, did the subject of reciprocity come up again before the Committee?

A. I believe it did, Mr. Hurd.

Q. Was that shortly after the first resolution?

A. I think it was shortly after that.

Q. Do you recall under what circumstances the subject came up the second time?

A. As I recall it, the different divisions of General Motors were being solicited by representatives of the du Pont Company for information regarding our purchases from different parts suppliers, and it was quite an embarrassing thing, because, from the standpoint of policy, the corporation was against reciprocity.

So that that was what brought it up at some later time. My best recollection is that it was very shortly afterward. I might not be correct on that.

Q. I show you Government's Exhibit No. 537, which is in evidence, and ask you if that is a resolution adopted the second time the subject came up before the Committee?

A. I believe it is, Mr. Hurd.

Q. I should like to call your attention to certain portions of this, it reads, under "Reciprocity," dated September 5, 1924:

[fol. 2874] "This subject considered at meeting on July 2nd was again discussed as a result of requests from the du Pont Company for information regarding volume of business done by General Motors with various suppliers who are prospective customers of the du Pont Company. The matter was discussed at great length.

"It was believed that the possession by du Pont salesmen of information regarding volume of business done by General Motors' Divisions with any suppliers would per se indicate a relationship between the two Corporations which would influence the supplier in the placing of his business. It is further believed that our buying position would be prejudiced in that suppliers who had been influenced to place business with General Motors might reasonably expect our divisions to place business with them.

"Finally it was agreed that as a practice General Motors could not undertake to supply information showing the volume of business done with any suppliers to the du Pont Company but that in special cases, upon request by the President of the du Pont Company to the President of General Motors, the situation would be properly dealt with."

• Mr. Sloan, do you recall the purpose of this president resolution?

A. Yes, I do recall it.

Q. What was it?

A. I think I misunderstood you, Mr. Hurd. Will you repeat the question?

Q. The purpose of the portion of the resolution that says the president of one company may communicate with the president of the other.

A. Well, as I have testified here before, it is undesirable [fol. 2875] to lay down hard and fast rules because circumstances frequently develop that interfere with what ought to be properly done.

• In this case it was thought desirable to leave it to the presidents of the two corporations to use their discretion when any problem arose that required special consideration.

Q. Now, I want to call your attention to the remainder of the resolution:

"and that if the du Pont Company were to furnish to General Motors a list of suppliers whom it is desired to favor with inquiries, our divisions would endeavor to meet their wishes in this regard."

What was your understanding of that portion of the resolution?

A. As I recall, that was not in the area of reciprocity. It was simply in the area that if du Pont had some suppliers and they wished to submit them to us, we would be glad to favor them with inquiries. That was no different than a normal practice because General Motors was always glad to have lists of people who could supply them with whatever they needed under proper conditions.

Q. Following the passage of this resolution, did it become a practice for you as president of General Motors to

exchange information with the president of du Pont relating to reciprocity?

A. No, it was not a general practice. In fact, there was only one case of that kind, and I am not sure it is in the specific area we are talking about. One case did arise, but only one case.

Q. Do you recall what that case involved?

A. Mr. Lammot du Pont, I think, was probably president [fol. 2876] of du Pont at that time,—I am not sure of the date—wrote me to the effect that the Bethlehem Steel Company, I think it was, was using reciprocity, and that they had lumped together the purchases of du Pont and General Motors as a basis of that sort of activity, and Mr. du Pont asked me if I was willing to give them information relative to our purchases, the understanding being that it was not to be used to solicit business or to get more business. It was simply to be used from a factual point of view to protect the business that they had. I didn't interpret that as relating to reciprocity though perhaps it was.

I simply considered it from the standpoint that an unfair advantage was being taken, and facts should be available to protect against anything of that kind.

Q. I show you a document which is in evidence as Government's Exhibit No. 543, and turning to the third page, I ask you whether that is the inquiry from Mr. Lammot du Pont about which you have testified?

A. That appears to be the letter about which I testified a moment ago. I notice, though, that it is not the Bethlehem Steel Company. It was the Jones & Laughlin Steel Company. I was confused.

Mr. Hurd: If the Court please, I should like to read portions of Government's Trial Exhibit No. 543, on the third page, a letter dated January 18, 1928, to Mr. Sloan:

"Our Explosives Department is confronted with the prospect of losing explosives trade in the Lake Superior district through a competitor taking its customers away in what is generally known as the 'reciprocity' argument.

"In order to combat this competition we desire to put before the Jones & Laughlin Steel Company interests [fol. 2877] and the Inland Steel Company interests the

facts as to what of their products the du Pont Company and its affiliated companies buy from them. For this purpose could you have someone send me a statement of the 1927 purchases by General Motors Corporation and its subsidiaries from the Jones & Laughlin interests, as represented by their subsidiary companies.

"Also purchases from the Inland Steel Company, as represented by their subsidiary companies.

"It is, of course, understood that in presenting these figures to our customer it will be for the purpose of retaining trade now enjoyed. There will be no promise or assurance that these purchases will continue or that the du Pont Company's efforts in the past have caused G.M. to place this business. We simply want to be in a position to place before the steel companies the actual facts as they have existed. This is very important trade to us and I would greatly appreciate the assistance you can render by giving us this information."

By Mr. Hurd:

Q. Did you furnish the information, Mr. Sloan?

A. I authorized it to be furnished, and I presume it was, Mr. Hurd.

Q. As near as you can recall, was there ever any other instance of your supplying information to the du Pont Company with respect to the subject of reciprocity?

A. I am very certain there was never any other instance except the one we have just discussed.

[fol. 2878] Q. Mr. Sloan, I should like to call your attention to certain portions of the amended complaint in this case.

First, paragraph 82:

"Shortly after du Pont Company acquired control of General Motors, the two companies entered into an understanding under which General Motors provided du Pont Company with detailed information as to the companies which were suppliers of General Motors and the amounts and the volume of goods which such suppliers sold General Motors."

Do you know, Mr. Sloan, of any instance to that effect?

A. I never heard of it, and I am sure if there was one, I would have had to know about it because I was the one who would administer it.

Mr. Hurd: (Reading):

"Later this general arrangement between du Pont and General Motors was formalized under an agreement between the two companies which provided that whenever a high executive of du Pont desired information concerning suppliers of General Motors the request for such information should be directed to a designated high executive of General Motors who would secure the specific information and furnish it to du Pont Company."

By Mr. Hurd:

Q. Mr. Sloan, do you know of any agreement between the du Pont Company and General Motors that that would take place?

A. I don't know of any such agreement, Mr. Hurd.

[fol. 2879] Q. Then paragraph 83:

"The du Pont Company made it known to suppliers in various ways that if they desired to continue to do business with General Motors, it would be advisable for such suppliers to buy from du Pont Company those materials manufactured by du Pont Company which were needed in connection with the manufacture of the products which the suppliers produced."

Do you have any information that the du Pont Company ever represented to suppliers that they would have to deal with du Pont if they wanted to get business from General Motors?

A. I have no knowledge of any such thing, Mr. Hurd.

Mr. Sloan, I now wish to turn to a new subject, and I show you a document that is marked as General Motors Exhibit No. 69 for identification, and ask you if you recall receiving that letter?

A. Yes, I recall that letter, Mr. Hurd..

Mr. Hurd: If the Court please, I offer General Motors Exhibit No. 69 in evidence.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 69.)

Mr. Hurd: I should like to read it.

It is a letter dated January 7, 1922, from Mr. H. M. Craig, Acting General Sales Manager, of the Samson Tractor Company of Janesville, Wisconsin, addressed to Mr. Sloan:

"Our Branch Manager at Minneapolis has sold to [fol. 2880] the E. I. du Pont de Nemours & Co., Hartley Building, Duluth, Minnesota five (5) Three-quarter ton Sampson Trucks for immediate delivery subject to the O.K. of the home office at Wilmington.

"As I understand it, the du Pont office at Duluth may suggest a preference for a certain truck but the home office at Wilmington can buy or ship them any truck that they deem advisable.

"It seems that Mr. Orr, the Manager of the du Ponts at Duluth, is very anxious to get the Samson Trucks and, as you know, we need the business. Therefore I was just wondering if you knew any way to influence the home office at Wilmington to O.K. the preference of their branch manager at Duluth. If you can do any thing on this I certainly will appreciate it."

By Mr. Hurd:

Q. What did you do, Mr. Sloan, about that, if anything?

A. I simply referred the letter to the president of the du Pont Company, without recommendation.

Q. I show you a document marked General Motors Exhibit No. 70 for identification, and ask you if that is the letter to which you referred?

A. That is the letter to which I just testified.

Mr. Hurd: If the Court please, I offer General Motors Exhibit No. 70 in evidence.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 70.)

Mr. Hurd: I should like to read it. It is a letter from Mr. [fol. 2881] Sloan to Mr. Irenee du Pont dated January 13, 1922, about a week after this prior document:

"I am enclosing herewith copy of a letter received from our Samson Tractor Division, which is self-explanatory. Anything you can properly do in connection with the matter will be greatly appreciated."

By Mr. Hurd:

Q. Then, Mr. Sloan, I show you a document in evidence as Government's Exhibit 523, and ask you whether or not that is the reply you received from the du Pont Company?

A. Yes. I recall that letter, Mr. Hurd.

Q. Mr. Sloan, will you state what your purpose was in sending that letter to the du Pont Company, the letter from your own branch manager?

A. It was sent to them without recommendation for any action that they thought they could properly take.

Q. Was that an unusual act for you to do that?

A. No, I don't think it was. I would be apt to take the same action with respect to anybody I knew. Under certain circumstances, I might take that action. I didn't ask for any consideration. I simply submitted it to them for such action that they might properly take.

Q. Mr. Sloan, I wish to call your attention to the complaint, paragraph 56, starting about the middle of the paragraph:

"It was further understood and agreed that du Pont Company in buying cars or trucks or other products produced by General Motors would buy all or substantially all of such goods from General Motors, and refrain, in whole or in large part, from purchasing such products from General Motors competitors."

[fol. 2882]. By Mr. Hurd:

Q. Have you ever heard of an agreement by General Motors and du Pont that the du Pont Company would buy from General Motors products made by General Motors which the du Pont Company could use?

A. I never heard of such an agreement.

Q. Did you send that letter from your branch manager to the du Pont Company because you thought there was some agreement between the two companies?

A. I certainly did not.

Mr. Harsha: I object to that question, your Honor.

The Court: Read the question.

(Question read by the reporter.)

The Court: What is the basis of the objection?

Mr. Harsha: I think the letter speaks for itself, what he thought I do not think is relevant or pertinent.

The Court: I think it is proper for him to state the facts. He may answer.

By Mr. Hurd:

Q. You may answer.

A. No, I did not send it for that purpose at all. I sent it as a matter of business. I knew of no such agreement, and therefore I could not send it having that agreement in mind.

Q. I also call your attention to paragraph 58 of the complaint:

"The du Pont Company, from in or about 1917, has purchased all or substantially all of its requirements [fols. 2883-2884] of cars and trucks and other items produced by General Motors from that company or its dealers."

By Mr. Hurd:

Q. Do you know whether that statement is true?

A. I know nothing about it at all.

Q. Mr. Sloan, I now wish to turn to the subject of the General Motors Bonus Plan.

While you were with United Motors, did you have occasion to hear anything about the General Motors Bonus Plan?

A. To the best of my recollection, Mr. Hurd, I did.

Q. Do you recall what the circumstances were?

A. The circumstances were something like this: As I have already testified here, United Motors was consolidated with General Motors towards the end of 1918, and just previous to that—I think it was in the summer of 1918—I received a letter from a vice president of General Motors submitting a bonus plan and asking for my criticism of it, and to pass on to him any comments that I had to make.

Q. Mr. Sloan, I show you two documents marked General Motors Exhibits Nos. 26 and 27 respectively, and ask you if that is correspondence passing between yourself and Mr. Haskell in 1918 regarding the subject of General Motors bonus.

A. That is the correspondence, Mr. Hurd, to which I have just testified, both Mr. J. A. Haskell's letter to me, and my reply to Mr. Haskell.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibits Nos. 26 and 27.

(Said documents, so offered and received in evidence, were marked General Motors Exhibits Nos. 26 and 27.)

[fol. 2885] By Mr. Hurd:

Q. Mr. Sloan, did this bonus plan go into effect shortly after that date, do you recall?

A. Yes, it did, Mr. Hurd. It went into effect, applying, if I recollect correctly, to the year 1918.

Q. What was the basis for your statement in the letter that you considered something like this very necessary?

A. Well, I was having difficulty in keeping my organization satisfied. My reference there was to the United Motors, because it was not consolidated with General Motors at that time. I am a great believer in incentive to get the most out of an organization, and I think the nearer we can come to the old proprietor form of management, the better off we are. Therefore, anything that gave the organization an additional incentive to do an additional job for the corporation, I was thoroughly in accord with.

Not only that, but it contributed to the stability of the organization by giving people a chance to look forward to something in the future, and therefore they were more likely to continue to serve General Motors rather than to be influenced by competitive opportunities.

Q. Now, do you recall whether or not at this time—this is 1918—there were employment contracts in existence between managers of divisions and General Motors?

A. There were such contracts, Mr. Hurd, I believe, between a limited number of general managers in charge of the more important operations. I am not acquainted with those, the terms of those contracts. I didn't participate

in them so far as I recall, and I had nothing to do with drawing them up, so I cannot testify as to the details of such agreements, but such agreements did exist.

[fol. 2886] Q. After Mr. Pierre du Pont became president of General Motors, do you know whether or not the General Motors' bonus plan continued?

A. To the best of my recollection it continued at the option of the holders of the contracts, but in view of the considerable number of changes in the organization, when changes were made the contracts were not renewed, and the incentive of those particular executives was entirely through participation in the regular bonus plan.

I believe there was one general manager that continued his contract into 1922, something like that, but generally speaking, with the introduction of the bonus plan, those contracts terminated in a very short space of time.

Q. That is the employment contracts?

A. I am speaking of the employment contracts.

Q. They continued for a short period of time only?

A. Yes.

Q. Now, did the bonus plan that had been adopted under Mr. Durant, did that continue after Mr. Pierre became president?

A. That continued after Mr. Pierre became president. As a matter of fact, Mr. Hurd, it has continued right up to date with certain changes. The principles involved have not changed.

Q. Mr. Sloan, do you recall the organization of Managers Securities Company, and the Managers Securities Plan in the early 1920's?

A. The Managers Securities Company Plan was adopted in 1923. I am familiar with it, Mr. Hurd.

Q. Do you know who originated the idea of the Managers Securities Plan?

A. I am not too certain as to where the original concept came from, but my personal opinion is that it was Mr. [fol. 2887] Donaldson Brown who at that time was vice president in charge of finance of General Motors. He collaborated with Mr. Raskob who was chairman of the Finance Committee of General Motors, and between the two, the details of the plan were worked out.

Q. What did you consider to be the purpose of the Managers Securities Plan?

A. The Managers Securities Plan was a component part, in a way, of the bonus plan. The bonus plan was based upon allotting to the different executives, based upon their performance in any one year, a certain portion of the Bonus Fund. They made no capital investment, and it was a year-to-year proposition. The Managers Securities Plan was quite different. In that case the executives, to whom the allotments were made, made an investment in the Managers Securities Company and back of the investment, subject to the indebtedness of the company, there was a very large block of General Motors stock; so really in principle the executives were buying an interest in a sort of a speculative investment. If the stock went up and the business was profitable, there was quite a multiplying power between their investment and the ultimate benefits that they would receive at the termination of the plan.

Q. What was your position with respect to the plan? Were you in favor of it, or against it?

A. I was strongly in favor of it for the same reasons that I testified a minute ago on the bonus plan. I thought it was a thoroughly sound and desirable thing to do.

Q. So far as you know, did the plan have any purpose other than to develop incentive in General Motors?

A. I don't see how it could have.

Q. Would you give us a brief outline as to how the [fol. 2888] Managers Securities Company Plan operated?

A. Including how it was formed, Mr. Hurd?

Q. Yes.

A. A corporation called Managers Securities Company was formed and it had class "A" stock to the extent of \$5,000,000 par value and class "B" stock to the extent of a million and a quarter par value.

The Managers Securities Company bought from General Motors Securities Company a 30 per cent interest in General Motors Securities Company. That was equivalent to 30 per cent of seven and a half million shares of General Motors common stock owned by General Motors Securities Company.

General Motors Securities Company had no assets or liabilities other than the seven and a half million shares of General Motors common stock.

Managers Securities paid for the interest in General Motors Securities Company \$5,000,000 in cash and

\$28,750,000 in 7 per cent preferred stock, which was guaranteed by a corresponding amount of 6 per cent bonds.

General Motors Corporation made an agreement with Managers Securities to pay into Managers Securities Company year by year 5 per cent of the General Motors' earnings after 7 per cent in the invested capital was deducted.

General Motors agreed to pay into the Managers Securities Company a minimum of \$2,000,000 a year, irrespective of the 5 per cent. The 5 per cent that General Motors paid into Managers Securities Company was charged to the bonus fund.

The bonus fund contemplated a setup of 10 per cent of the earnings of the corporation after 7 per cent was deducted, so half of that, or 5 per cent was allocated to Managers Securities Company.

Managers Securities Company organization didn't cost the stockholders anything more than was contemplated under the bonus plan. It was simply an allocation of half of that amount.

General Motors also subscribed to the \$5,000,000 of stock, to which I have already testified, and in turn General Motors sold the stock or substantially all of it to the principal executives of the corporation on a basis of an allotment determined by a special committee of the Board of Directors that was designated for that purpose.

That, in general terms, without going into details, Mr. Hurd, will explain the setup and the purposes and how it worked.

Q. Did the people who participated in Managers Securities participate in the bonus plan?

A. No, they did not, in principle, Mr. Hurd. That was not intended. But the earnings of the corporation developed so rapidly, the business expanded so rapidly, that the cost of the "A" stock and the corresponding "B" stock by the year 1926 reached a point where the executives couldn't afford to buy it, so in that case a bonus was allotted to some, supplementing their allotment in Managers Securities Company in order to preserve the equities.

I might add, to make the matter clear, I hope, that the General Motors Corporation did not allot all the \$5,000,000.00 par value of stock to the executives. There was a reserve, and to the extent that the General Motors therefore

participated in the five per cent payment that went back to [fol. 2890] the bonus fund. So in the subsequent years the allotment to Managers Securities Company was thus reduced below five per cent, and the balance went to the bonus fund.

Do I make that clear, Mr. Hurd?

Q. I have a few questions regarding it that I want to ask just to be sure that I understand what you have testified to.

Under the bonus plan as it existed originally, did it provide for a fund of ten per cent of the earnings of General Motors after seven per cent had been earned on invested capital?

A. That is correct.

Q. This original basis of the bonus plan, did that continue throughout the operation of the bonus with the exception of the portion that went to Managers Securities?

A. It continued all during that period. As a matter of fact, Mr. Hurd, it has continued up to now.

Q. So that when you formed Managers Securities Company, you used only the same amount of money that had been used, set aside, before for bonus purposes, but half of it went for bonus and half of it went to Managers Securities, is that correct?

A. That is correct, subject to the fact that where part of the five per cent payment came back to the corporation, because the corporation was a stockholder in Managers Securities, that in turn went back to increase the bonus, so that in later years the allotment to Managers Securities Company was less than five per cent.

Q. Less than half of the total ten per cent?

A. The ten per cent remained the same over the years, Mr. Hurd. That didn't change.

Q. And the executives who participated in Managers Securities, in effect, then received their bonus through [fol. 2891] Managers Securities as a general proposition rather than getting it direct as a bonus?

A. That is correct.

Q. You have referred to a committee existing for the purpose of determining who should participate in this Managers Securities Plan. Who was on that committee?

A. There was a committee of three appointed by the Board of Directors to deal with this matter specifically. Mr.

Pierre du Pont was the chairman. Mr. Arthur Bishop and Mr. Seward Prosser were the other two members of the committee. Of course, they were all directors.

Q. Mr. Sloan, I show you a document that is marked General Motors Exhibit No. 28 for identification. It purports to be a report from Mr. Raskob, I believe, to the Finance Committee of General Motors, dated October 2, 1923.

I ask you if the plan which is attached to the report was the General Motors plan that you have described?

A. I am not sure that this is the form of the plan, Mr. Hurd. This contemplates four million Class "A" and one million Class "B". I am sure that the Class "A" was five million. I think that in general this was the plan, but I think there were some details changed. I would expect there were some modifications later on. I don't think this is correct.

Q. Does this set up the general principle of the plan?

A. The general idea is correct. For instance, it says that the amount of stock shall be equivalent to two million. I am sure the amount of stock Managers Securities Company bought was 30 per cent of General Motors securities, and that was 30 per cent of 7,500,000 shares.

That would not agree with this, so I am sure there was a later submission by Mr. Raskob to the General Motors Finance Committee changing some of the details, but not the principle.

[fol. 2892] Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 28.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 28.)

Mr. Hurd: I should like to read two portions from the letter. This is a report to the Finance Committee of General Motors dated October 2, 1923, from Mr. Raskob, subject "Managers Securities Company."

Reading from the first page:

"On August 9, 1923, the Board of Directors of your Company considered the plan of the Managers Securities Company and adopted the following resolution:

"RESOLVED, that the Board of Directors approves in principle the plan with regard to the pro-

posed Managers Securities Company recommended by the Finance Committee in its report of August 7, 1923, and refers said plan back to the Finance Committee to be worked out in detail and submitted to the stockholders for ratification, provided the du Pont Company is willing to enter into the arrangement outlined in said plan."

Q. What was the participation of the du Pont Company in this plan, Mr. Sloan?

A. They had nothing to do with it, Mr. Hurd, except to authorize General Motors Securities Company to sell to the Managers Securities Company a thirty per cent interest in General Motors Securities Company, which I have already testified held seven and a half million shares of General Motors common stock as then existing, and to [fol. 2893] take in payment thereof \$5,000,000.00 in cash and \$28,750,000.00 in seven percent preferred stock secured by bonds.

Mr. Hurd, those figures I have just testified to do not agree exactly with the memorandum you gave me. There is some discrepancy.

Q. The du Pont Company was in effect making available indirectly to the executives of General Motors some of the stock which it had in General Motors, is that correct?

A. That is correct. That was equivalent, Mr. Hurd, to 2,250,000 shares of General Motors common stock.

Q. Continuing on with the document:

"As the result of long negotiation between the officers of the two companies, the officers of the du Pont Company are willing to recommend the plan to the du Pont Board with the following modification."

I won't read the modifications. But coming to the last paragraph of the report, at the bottom of page 2:

"In the opinion of the writer—"

that is, Mr. Raskob—

"—the plan as now drafted will be to the advantage of General Motors Corporation and it is recommended that the amended plan be adopted by the Finance Com-

mittee and submitted for appropriate action thereon to the stockholders at a special meeting to be held on November —, 1923, and that a record of stockholders entitled to vote thereat be taken at the close of business on October —, 1923."

The Court: Court stands recessed for ten minutes.

(A recess was here taken.)

[fol. 2894] By Mr. Hurd:

Q. Mr. Sloan, was the proposed Managers Securities Plan discussed with you before it was put into operation?

A. Yes, at some length.

Q. And do you recall whether or not you made any suggestions with respect to taking the plan up with other people in General Motors?

A. When the plan was pretty well finalized, so far as its operation was concerned, I took it up with a representative group of the executives in the corporation to get their reaction as to whether they thought it was a sound and desirable plan, the same as I do in all matters that come up in the corporation.

Q. Did anyone else take the plan up with a representative group in General Motors?

A. Who were they?

Q. No. I say, did anyone else take the plan up with the representative group, so far as you know?

A. No, it was my province entirely, because I was chief executive officer of the corporation at that time, Mr. Hurd.

Q. Mr. Sloan, I show you a document which has been marked General Motors' Exhibit No. 29 for identification, which purports to be a memorandum from you to Mr. Raskob in October of 1923.

Do you recall writing that memorandum?

A. I do, very definitely, yes.

Q. Do you recall whether the suggestions contained in your memorandum were carried out?

A. I think they were in a large part.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 29.

(Said document so offered and received in evidence was marked General Motors Exhibit No. 29.)

[fol. 2895] Mr. Hurd: I should like to call attention to a few portions of the document, on the first page, the last paragraph, the second sentence:

"I firmly believe that any plan that puts any man in business for himself is a constructive one, but due to the magnitude of this thing and the number of men we are taking in, I think we ought to be more than certain that the work-out is going to be entirely satisfactory."

And referring to the second page, at the top:

"Without going into a lot of discussion about the various angles there are to it, I would suggest a procedure substantially as follows:—

"1. I believe that the Finance Committee is the best body of men possible in our situation to judge as to the future"—

By Mr. Hurd:

Q. What future outlook do you refer to there, Mr. Sloan?

A. The future outlook of the General Motors Corporation. That is related to the fact, Mr. Hurd, as I have already testified, that we were asking these men to make a substantial investment in the stock of Managers Securities Company.

Mr. Hurd: (Reading)

"—and to measure the hazard"—

By Mr. Hurd:

Q. What hazard was there involved?

A. Well, it seems rather ridiculous now, but looking back [fol. 2896] thirty years at the position of General Motors at that time, it was a hazardous investment from the standpoint of some people—not from my point of view, but from the point of view of others.

Mr. Hurd: (Reading)

"—and to properly weigh the present situation of the industry and the future earnings of the Company; also the relation between the future market value and the

book value and the many other uncertain elements connected with the situation which are all a matter of judgment and perspective. If they feel that from those standpoints the risk is a good business risk, then I think they should take the position that we should go ahead on some such plan, but we should not definitely determine at least as to the magnitude of the plan but solely that it is one which they can take the responsibility of at least offering to the organization.

"2. The next step would be that the officers of the Corporation would discuss the plan in detail with either those men who are to participate or a representative group of those men."

By Mr. Hurd:

Q. Is that the action that you testified to?

A. I have already testified to the fact that that was done. Then turning over to the third page, Paragraph 3:

"3. I believe if the first step is taken, followed by the second, then we could safely go ahead, feeling that [fol. 2897] we had done everything possible to do the right thing by this particular group of men in giving them the opportunity of profiting through the development of the Corporation and that we at least could feel morally satisfied that if it did not turn out as we honestly felt it would that we had done nothing that we could in any way regret.

"4. While I do not think it has any bearing upon my position toward the plan as an officer of the Corporation, my position as an individual toward the future of the Corporation is fully evidenced by the fact that I have practically everything that I have in the world in General Motors, and not only that, as you know, I have recently made a very large commitment at the present market increasing my interest still further and have incurred a very heavy obligation, for me at least, for that purpose."

By Mr. Hurd:

Q. Mr. Sloan, did you have anything to do with the determination as to who would participate in this plan, and the extent to which they would participate?

A. No, not directly, but I made recommendations. In other words, indirectly.

Q. Will you explain what part you did take?

A. The allotments were made and determined by this special committee. I testified to that before, and it determined how much of an investment each executive should be offered. After that was determined by the special committee, they took it up with me, because I was at the time the chief executive officer of the corporation, and I gave it a great deal of consideration and made some recommendations [fol. 2898] in the way of changes in the allotments that were presented to me by the special allotment committee.

In terms of generalities, my recommendations were to reduce the number of executives participating, and to increase somewhat the allotments, to make it a greater incentive for a limited number of people more in the high echelon of authority as it existed at that time.

Q. What did the committee do with respect to your recommendations?

A. The committee in general accepted my recommendations.

Q. Do you recall any exceptions?

A. No, sir, I do not.

Q. Mr. Sloan, I show you a document which has been marked General Motors Exhibit No. 30 for identification.

(Said document so offered and received in evidence was marked General Motors Exhibit No. 30.)

Mr. Hurd: It is a letter from Mr. Pierre du Pont to Mr. Prosser and Mr. Bishop; and which has attached to it certain tabulations.

By Mr. Hurd:

Q. Do you recall that document?

A. Yes, I do, Mr. Hurd.

Q. Will you turn to the second page under the heading: "Central Office Administration and Heads Divisions."

You notice in the first column a list of names; in the second column, the positions; the third column, salaries; and the fourth column is headed "P. S. du Pont Allotment."

Do you know what that represents?

A. That was the original allotment that the committee made.

Q. Before they were submitted to you?

A. That is correct.

[fol. 2899] Q. The next column is headed "Final Allotment." Do you know what that represented?

A. That was the final allotment after receiving the recommendations from myself.

Q. Do the figures under this column, "Final Allotment" represent, so far as you can recall, the suggestions you made as to the allotments?

A. Almost exactly the same, Mr. Hurd.

[fol. 2900] Q. Mr. Sloan, after you became president of the corporation, in May, 1923, what, if anything, did you have to do with the administration of the bonus plan?

A. According to the terms of the bonus plan, the fund that was set up according to the formula that I previously [fol. 2901] testified to was distributed as far as administration is concerned, by the chief executive officer of the corporation.

I was that officer at that time as president.

However, I might add that the recommendations of the chief executive officer went before the Finance Committee for approval. They had the final authority in the premises.

Q. Did the Finance Committee change your recommendations in any instance that you can recall?

A. I don't remember any such instances, Mr. Hurd.

Q. At a later date did the recommendations go before a Bonus and Salary Committee, do you recall, instead of the Finance Committee?

A. Yes. Beginning with 1937, the submissions of the chief executive officer went to the Bonus and Salary Committee.

Q. You were still the chief executive officer at that time?

A. I was between 1937 and 1946, and then in 1946 Mr. Wilson became chief executive officer. From 1946 on, he made his recommendations to the Bonus and Salary Committee, who had the final jurisdiction.

Q. During the period that you submitted recommendations to the Bonus and Salary Committee, were there any

changes made in your recommendations that you can recall?

A. I don't recall that there were any. If there were, Mr. Hurd, they were completely insignificant.

Q. Mr. Sloan, I show you a document marked General Motors Exhibit No. 31 for identification. Do you recall whether that contained your recommendations for the year 1924?

A. I recollect this, Mr. Hurd.

Q. This document sets forth a type of procedure for the handling of the bonus.

✓ How long did you continue to handle the bonus in a manner similar to that set forth in this document?

A. The broad principles have continued right up to date. There have been some changes in details due to the impact of time and changes.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 31.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 31.)

[fol. 2904] By Mr. Hurd:

Q. Mr. Sloan, was your proposed procedure approved by the Executive Committee, do you recall?

A. I presume it was, Mr. Hurd. They didn't have any jurisdiction. As I said in the report itself, I submitted it to them for information.

Mr. Hurd, may I add something, simply to clarify the point, so there will be no misunderstanding?

That is this: although the chief executive officer had jurisdiction, so far as the higher executives of the corporation are concerned, their compensation came through the Manager Securities Company. Therefore I made no allotments to the higher officers of the corporation because that was automatic and was determined by the Special Allotment Committee.

Q. Without going into any of the details of the plan, or the procedure, contained in Exhibit No. 31, can you tell us, Mr. Sloan, in general how the plan operated?

I am particularly interested in whether or not you undertook to measure the value of each man's service who received a bonus.

A. You are talking now about the operation of the Bonus Plan, I take it, Mr. Hurd?

Q. That is right.

A. Naturally in such a large operation the chief executive officer, the president in this case, who had the responsibility [fol. 2905] could not determine the allotments in the lower echelon of authority. Therefore the plan prescribed that the aggregate fund, which was 10 per cent of the profits after 7 per cent of the capital employed was deducted, would be divided up into, you might say, component parts.

For instance, a certain amount was allocated to a division. The chief executive of that division was the responsible agent in distributing the bonus within that division.

Naturally, the chief executive officer couldn't be expected to know so many people, let alone have any contact with them, the necessary contact to judge the performance in any one year upon which the incentive plan was based.

Q. Mr. Sloan, following the Managers Securities Plan, was there another plan on a similar basis as Managers Securities, used in General Motors?

A. Yes, as I have already testified here, the corporation expanded so rapidly, that the cost of the "A" stock and the "B" stock which should have been allotted to the executive staff became too expensive, and as the corporation expanded younger men came into the picture and other executives were added, so that we felt that something had to be done to broaden the scope of the plan.

The plan as originally contemplated was an eight year plan. When 1930 came along, due to the conditions I have just mentioned, it was thought wise to terminate the plan. That was done, and a settlement was made with the stockholders, and in effect January 1, 1930 a new plan was developed which was known as the General Motors Management Plan, General Motors Management Corporation. That was a seven year plan and continued in effect for the full seven years.

After that terminated no further plans of the kind of [fol. 2906] Managers Securities Company or General Mo-

tors Management Corporation have developed; and the incentive, has continued along the original purposes of the Bonus Plan as it was established back in the year 1918.

Q. Mr. Sloan, I wish to call your attention to the amended complaint in this case, paragraph 55, and I am reading the last sentence in the paragraph:

“As an inevitable and intended consequence of the operation of the bonus plan, General Motors executives have responded readily to the influence and desires of the du Pont Company.”

Mr. Sloan, to what extent, if any, was the bonus plan intended to induce General Motors executives to respond to the influence or desires of the du Pont Company, as far as you know?

A. Of course, not. On the face of that, it was an impossibility. No such thing existed.

Q. Do you know whether or not the Managers Securities Plan was intended in any respect to induce General Motors executives to respond to the wishes of the du Pont Company?

A. The same answer. As a matter of fact, the Managers Securities Company provided a wonderful incentive to the organization and had a great deal to do with expanding the earnings and the business of the corporation, all of which rebounded to the profit of the du Pont Company, but there was no such thing as indicated in that charge.

Q. What is the situation with respect to the Management Corporation?

A. The same thing.

Q. Mr. Sloan, in suggesting participation in any of the plans, what consideration, if any, had you given to the purchasing practices of the participants?

A. Will you repeat that, please?

[fol. 2907.] Q. In suggesting participation in any of these plans, in suggesting who should participate in the bonus plan, to what extent have you considered what the purchasing practices were of the prospective participants?

A. I have given no consideration to it at all. That was out of the picture in every way, form, or manner.

Q. To what extent had you given consideration to the purchasing practices in making suggestions for participants

in the Managers Securities or the Management Corporation Plan?

A. The same thing.

Q. What consideration have you given to the attitude of the participants toward the du Pont Company?

A. None, because I never knew what their attitude was. It didn't add anything to the picture in any way, shape or form.

Q. As far as you know, have any of these plans been for the purpose of making anybody in General Motors subservient to the du Pont Company?

A. It is a ridiculous thing to contemplate. It didn't exist at all.

Q. To what extent do you consider that the Managers Securities Plan and the Management Corporation Plan have contributed to the growth and the development of General Motors Corporation?

A. Mr. Hurd, I think they have had a tremendous influence in contributing to the development of General Motors. I don't think their influence can be over-estimated. I testified several days ago when explaining to the Court the organization setup, the importance of the decentralized system of management, and if I were asked, as I often am asked, as to what has contributed to the general and outstanding success of General Motors, I would say it was the decentralized system of management, supported by the incentive plans.

[fol. 2908] Q. Mr. Sloan, I now wish to turn to a new subject, and that is Fisher Body Corporation. Did you have anything to do with the original investment by General Motors in Fisher Body in 1919?

A. Nothing whatsoever.

Q. Are you informed as to the purpose of that investment, as far as General Motors is concerned?

A. Well, at that time it was recognized that the industry was moving very rapidly into closed bodies. Everybody began to recognize that the automobile couldn't take its proper place in the scheme of things with people out in the weather protected by all kinds of grotesque protection, and General Motors had, in 1919, no capacity for producing closed bodies, and it was considered desirable by Mr. Durant to meet that issue through purchasing a substantial interest in the Fisher Body Corporation.

Q. Do you recall whether contracts were given to any of the Fisher brothers at the time of the investment in 1919?

A. I recall that there were, but I didn't participate in them or never saw any of the contracts.

Q. Do you recall whether or not a contract was entered into at that time between Fisher Body and General Motors regarding the production of closed bodies?

A. Yes, there was a contract made. I never saw the contract, but my understanding is that it was a cost-plus contract. In other words, General Motors paid Fisher the cost of production, plus a profit, and subject to correction, I have always understood that that profit, the profit so established, was 17½ per cent over cost.

Q. In 1924, I believe some of the other exhibits show that several of the Fisher brothers took a position on General Motors top committees, that is, Fred Fisher was elected to the Finance Committee in 1944.

[fol. 2909] Do you recall that?

A. Yes, I do, Mr. Hurd.

Q. And Charles Fisher was elected a director and member of the Executive Committee in 1924. Do you recall that?

A. I recall that.

Q. And Mr. L. P. Fisher was elected a director and member of the Executive Committee in 1924; do you recall that?

A. Yes.

Q. Do you recall the circumstances under which they were brought into these positions?

A. Well, the three Fisher brothers that you have mentioned withdrew from Fisher Body, as far as the executive positions are concerned, and the direction of Fisher Body was turned over to the remaining three brothers, Ed, Will and Alfred Fisher, and Lawrence, Fred and Charles came into General Motors as operating executives.

Q. What was the occasion of their coming in?

A. Simply because they were very capable people and we needed men of talent, and they had distinguished themselves in developing a very fine enterprise, and Fisher bodies were recognized as outstanding in quality, and we needed that kind of talent in General Motors at that time, and needed it badly, and I was very anxious to have them come in and help us in the broader problems of General Motors, feeling satisfied that our interest in Fisher Body

would be properly taken care of by the remaining three brothers.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibits 32 and 33 which are letters passing between Mr. McGowan and Pierre du Pont in 1934.

(Said documents so offered and received in evidence were marked General Motors Exhibits Nos. 32 and 33.)

[fol. 2910] Mr. Hurd: I should like to read a portion of the first document, General Motors Exhibit 32. It is a letter from Mr. Pierre du Pont, Chairman of the Board of General Motors Corporation to Sir Harry McGowan.

Turning to the second page of the document, the fourth line, at the end of the line:

"In turn, Messrs. Fred and Lawrence Fisher agreed to sever their connection with the Fisher Body Corporation and become members of the General Motors executive committee, for the purpose of acquainting themselves thoroughly with General Motors operations and difficulties, without any allotment of specific duties. This I believe is a step forward. As it has not been possible for Alfred Sloan to give personal attention to all of the ramifications of the Corporation, I think the Messrs. Fisher are especially well adapted to assist him in ferreting out troubles promptly and applying remedies."

By Mr. Hurd:

Q. To what extent did the Fisher Boys do that, after they joined the company?

A. They did that in a very outstanding manner.

Mr. Hurd: General Motors Exhibit No. 33 is Mr. McGowan's reply to Mr. Pierre du Pont dated November 7, 1924:

"I have your letter of 21st ultimo, which I have read with very great interest indeed, and I congratulate you and your associates on being able to arrange such a contract as to bring the Fisher boys into more active [fol. 2911] participation in the activities of the General Motors Corporation. I am sure this is all to the

good, as it has been obvious to me on my recent visits that Alfred Sloan is somewhat over-burdened; in addition, it cements the relationship for all time with the Fisher Corporation, to which we all attach great importance."

By Mr. Hurd:

Q. Mr. Sloan, did you have any part in the acquisition by General Motors of the remaining forty percent interest in the Fisher Body?

A. I had no part, Mr. Hurd, in the working out of the financial consideration involved. Mr. Donaldson Brown and Mr. Raskob handled that. My part of the acquisition was to put all the pressure I properly could put on Messrs. Raskob and Brown to consummate the arrangement as soon as possible because it was of vital importance to General Motors that the consolidation take place.

In the intervening years between 1919 and 1924, the industry had moved forward to the point where it was almost an exclusively closed body as compared to the open bodies which was the practice before 1919.

The contract relationship between Fisher Body Corporation and General Motors Corporation being cost plus and profit, it became burdensome. The increased turnover reflected in return on capital resulted in cost and selling prices that were no longer competitive, which we could not adjust because we always had to respect the forty percent outstanding interests. If our foresight was as good as our hindsight, which it never is, the smart thing to have done was to take over the whole Fisher Body in 1919. The delay [fol. 2912] was very costly, but when we reached 1926, that consolidation was made, I believe. It is not a question of anything but a must. We just had to have that forty percent interest. It was unrealistic to think that an operation of the magnitude of General Motors could continue an operating arrangement such as I testified to here, and buy a substantial part of its bodies or all of its closed bodies under such circumstances.

We had to have an integrated operation.

Outside of those considerations, without going into detail, there were problems of assembly which were very significant, and to make a long story short, the acquisition of

that forty percent in 1926 was a must. We just had to have it irrespective of any other considerations.

My participation in the arrangement was to impress upon Mr. Raskob and Mr. Brown, who were not on the operating side, the importance of getting the job done as soon as possible.

Q. You mentioned you had a problem of assembly. To what do you refer?

A. What I meant by that was that we were establishing throughout the country assembly plants, because it was an economical method of production, and where we had a chassis assembly plant, we had to have a Fisher Body assembly plant, but the Fisher Body Corporation was unwilling to put in an investment in these assembly plants. That handicapped us considerably.

Q. Mr. Sloan, I show you a document marked General Motors Exhibit No. 34 for identification which purports to be a letter from you to Mr. Raskob.

Do you recall sending Mr. Raskob that document?

A. Yes. This is a letter dated February 13, 1926. It [fol. 2913] reflects my point of view as to the urgency of making the consolidation of which I just testified.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 34.

(Said document so offered and received in evidence was marked General Motors Exhibit No. 34.)

Mr. Hurd: I would like to read the first paragraph. It is a communication from Mr. Sloan to Mr. Raskob, dated February 13, 1926.

"I do not know whether I am butting in or not, but the time has come when the future developments of our plan and the protection of our competitive position requires that we make the most determined effort possible to work out Fisher Body situation along more constructive lines to the end that proper co-ordination can be effected. This is not only the development of the lumber situation which perhaps could be handled in some other way, but relates more intimately to general operating phases of our activities. In my judgment we will very soon reach the point where we are

absolutely blocked on certain important things; in fact, we are in that position in one instance today, as I think you recognize."

By Mr. Hurd:

Q. Now, Mr. Sloan, to what extent were you motivated, if any, in urging the acquisition of the remaining interests in the Fisher Body by a desire to have the Fisher Body purchase products from the du-Pont Company?

A. Mr. Hurd, that took no part in my business judgment of the necessity for it whatsoever. As a matter of fact, in my work with General Motors, I never considered anything of [fol. 2914] that kind. I always considered the facts and circumstances and dealt with them from the General Motors' point of view to the best of my business judgment.

Q. Did you hear of anyone else in General Motors who had been advancing, as the reason for the Fisher Body purchase, the necessity of getting the Fisher Body business for the du Pont Company?

A. I never heard of such a thing.

Q. Mr. Sloan, I now wish to turn to another subject which will probably occupy us most of tomorrow.

This is the subject of tetraethyl lead. Are you acquainted in a general way with the studies conducted by Mr. Kettering before he joined General Motors in 1919 with respect to the discovery of an anti-knock?

A. Yes, sir, Mr. Hurd.

Q. What is your understanding as to what Mr. Kettering was trying to accomplish, his purpose in making this study?

A. I first came in contact with the man in some detail in 1916 when I was with the United Motors, where I had the responsibility over the Dayton Engineering Laboratories Company, which was Mr. Kettering's company before it came into United Motors.

It was a visit in connection with that responsibility that I became familiar with what he was doing with anti-knock materials. I think his work went back to 1912 or 1913 when he first became interested in the problem.

Q. Do you know what stimulated his interest?

A. Mr. Kettering was a man who is always interested in finding out all he can about anything. I guess that was one

thing, but more importantly, I believe—he never told me this, but that is the way it looked to me—in the development of the electric self-starter, there arose a problem of superseding the magneto, which was used at that time to ignite [fol. 2915] the mixture in the car by what we called battery ignition. In other words, the electric self-starter and battery ignition came into the engineering picture of the industry about the same time.

He had great difficulty in selling battery ignition. When there was a knock in the engine, they always blamed it on the ignition. We did not understand much about those things anyway, so Mr. Kettering was more or less on the defensive. He had to prove it was not battery ignition that provided the knock, but it was something else. So that led him to intensify his interest in developing all about the knock that he could, and I think he started in on that in 1912 or 1913.

Q. Now, after General Motors acquired the Dayton Metal Products Company in 1918, do you know whether or not Mr. Kettering continued his experimenting on this subject?

A. He did. He continued his experimental work on anti-knock compounds.

Q. Was General Motors interested in this research in any respect?

A. General Motors was very greatly interested in a development of that kind.

Q. What was their interest?

A. Simply because it would contribute enormously to the efficiency of the automobile from the standpoint of the design of the engine; from the standpoint of fuel consumption by the car.

Q. Was General Motors interested in part in finding a new product for General Motors to sell?

A. No, that was not the primary interest. In my relationship with the development of tetraethyl lead, it has always been a secondary interest. I have been concerned with the significance and importance of tetraethyl lead as an anti-knock compound in improving economy from a user's standpoint, and likewise its impact on the engineering of the chassis.

[fol. 2916-2917] Q. Do you recall approximately when tetraethyl lead was discovered?

A. Tetraethyl lead was discovered in December, 1921.

Q. Prior to that time, had there been any other anti-knock compounds that Kettering had developed?

A. There had been certain other compounds that were claimed to be anti-knock compounds. One was benzol, which is a by-product of steel industry. It had very significant anti-knock qualities.

In addition to that, I know of none that were scientifically sound. There were some, I might say, fake compounds on the market which lasted a short time, but outside of benzol and tetraethyl lead at that time and since then, there has been no anti-knock compounds developed and sold or put on the market.

Q. When tetraethyl lead was discovered in December, 1921, what was your attitude as to whether or not a better anti-knock compound would later be discovered?

A. Well, I had no definite knowledge of that, Mr. Hurd, but of course in the tremendous technological development that was taking place all the time, one always has much reason to believe it won't be long before something comes up that is competitive or even better. That was always in our minds in the evolution of tetraethyl lead.

Adjournment.

[fol. 2918] ALFRED P. SLOAN, JR., a witness on behalf of the defendants, having been previously duly sworn, resumed the stand and testified further as follows:

Direct examination (Continued)

By Mr. Hurd:

Q. Mr. Sloan, you told us yesterday about the discovery of tetraethyl lead in December, 1921. From General Motors' standpoint, what was their interest in this new discovery?

A. What was what, Mr. Hurd?

Q. What was General Motors' interest in the new discovery?

A. General Motors' interest in the discovery of tetraethyl lead was to permit a more efficient relationship be-

tween the engine and fuel, and to make a better automobile, put it that way, from the standpoint of technological progress.

Q. To what extent has tetraethyl lead reached the result you hoped for at that time?

A. From the standpoint of results over the years?

Q. Yes.

A. Well, I would say without reservation that tetraethyl lead, both directly and indirectly, has made an enormous contribution to the automobile industry, both from the standpoint of the user and in other ways. Although it is not as dramatic as some gadgets that have been added, yet, from the fundamental point of view, it has made an enormous contribution to progress. The efficiency of the automobile engine is importantly influenced, among other ways, by what we call the compression ratio. As the compression ratio increases, the efficiency of the engine increases, and the limitations on the increase in the compression ratio is the ability of the fuel to burn without knocking, which is detrimental to the engine, and disagreeable to the operator.

The development of anti-knock fuel enabled us to raise the compression, and it has resulted not only in increasing the economy of the engine, but if the engineer desires, he can safely increase the ratio to secure more power in the engine without changing the size of the engine.

The result through the years that have passed since the introduction of tetraethyl lead is that the efficiency of the automobile from the standpoint of fuel consumption has been enormously increased.

The compression ratio, as I said before, as measured back in 1921 and 1922, was about four and a half to one. It has moved up to eight and a half to one, and notwithstanding the tremendous gains through those years, there is a possibility of further increase of mileage with respect to gasoline consumption by 25 or 30 percent. In other words, we can move up our compression ratios from eight and a half to one, where they are now, generally speaking, up to 12, which would give us a tremendous gain.

In addition to that, tetraethyl lead made a very important contribution from the standpoint of standardization of fuel. It opened up a complete new vista of accomplishments from

the standpoint of better co-relation between the engine and fuel. It has completely revolutionized the oil industry. I think it can be said that that is true of the automobile industry as the result of the development of anti-knock fuels.

It has changed the oil industry from the point it was in 1920 and 1921. When Mr. Walter Teagle was president of the Standard Oil Company, he said the idea in the oil industry was to pump it out of the ground and send it to the customers. It has changed all that. The oil industry, through the incentive of standardization, has developed a very revolutionary cracking process. Tetraethyl lead has increased the ability of the engine to accept, and operate satisfactorily on higher compression. The evolution from the beginning of tetraethyl lead to now may be called operation leap-frog; that is, I mean the engineer would move up the compression, and the oil industry would move up the anti-knock fuels to meet the compression, and that is how it moved gradually, but it was a very great gain to both consumers and to the fundamental engineering of the chassis over the thirty years that have taken place.

I could go into greater detail, but I think that is sufficient to answer your question.

Q. When tetraethyl lead was discovered through Mr. Kettering's organization, do you recall whether or not any problems were encountered in making it useable?

A. Three problems arose, Mr. Hurd.

One, it was soon discovered after tetraethyl lead was discovered, which you will recall was December, 1920—

Q. 1921.

A. It was soon discovered that the injection of tetraethyl lead as an anti-knock compound in the fuel had a very deteriorating influence upon the engine. It fouled the spark plugs; it developed a deposit in the engine which the engine could not accept, and the use of tetraethyl lead would have been impossible unless ways and means were developed to eliminate that difficulty.

That was the first problem that arose, and that problem [fol. 2921] was undertaken from the standpoint of investigation by the General Motors Research Division.

The second problem involved ways and means to manufacture the material. Of course, you could not sell it unless you manufactured it. The third problem was, what was the best way of introducing tetraethyl lead as an anti-

knock compound into the fuel to be purchased by the customer through the oil industry at their various stations throughout the United States.

Q. I think you said it was discovered in December, 1920. You mean 1921?

A. I am sorry. It was 1921. I stand corrected.

Q. Now as to this first problem, the effect upon the engine, you said that General Motors Research and Mr. Kettering's organization worked on that?

A. They undertook the research work necessary to clear the difficulties with the spark plugs to which I referred a moment ago.

Q. What was done with reference to the manufacturing problem?

A. The first thing that was done occurred in February, 1922, a couple of months after tetraethyl lead was discovered, when our Research, Mr. Kettering, made an agreement with the Massachusetts Institute of Technology to develop processes for manufacturing tetraethyl lead, and to investigate the whole subject. That was the first step that was taken.

Later in the year, in May or June, I think it was, Mr. Kettering put the problem up to the du Pont Company to make a similar investigation, of what was the best method of production. When tetraethyl lead was first discovered as an anti-knock compound, in December, 1921, what little we made was on a laboratory basis, and we used iodine as an aid.

[fol. 2922] Research continued to study on its own account the production problem, and early in the spring of 1922, they developed the bromine process. When that was discovered, later in the year, in May or June, Mr. Kettering asked the du Pont Company to make a Research study as to the production processes involving the use of bromine as an agent.

Q. Do you recall at whose suggestion this request was made of the du Pont Company?

A. Mr. Kettering did that on his own responsibility.

Q. What, if anything, was done regarding your third problem, your problem of distribution?

A. Well, the distribution problem came later. In early 1923, and into the beginning of 1924, General Motors made contracts with four oil companies and gave them the right

to the use of tetraethyl lead in their respective territories. One was Standard Oil of New Jersey, and the other was Standard Oil of Indiana, and the other was the Gulf Oil Company, and the fourth was the Louisiana Standard Oil Company, I think; anyway, it was a subsidiary of the New Jersey Company.

Mr. Hurd: If the Court please, I should like to call attention to Government's Exhibit No. 610 which is in evidence, which is the report from Mr. Pierre du Pont to Mr. Irene du Pont, dated March 24th, 1922, and which discusses the discovery of tetraethyl lead.

I should like to call attention to the second page of the document, the third paragraph:

"In order to start the use of this material, Kettering proposes that Cadillac design a new cylinder head, increasing compression (this is now being done). Every [fol. 2923] Cadillac car equipped with this new head will be provided a gas tank containing in a separate compartment two metallic bottles, each containing a quart of lead ethyl. These bottles will be sealed with a metallic seal, which will be punctured automatically when the bottle is placed in position for use. A small hand pump will deliver a charge sufficient for five gallons of gasoline at one stroke, so that as the gasoline tank is filled, one stroke of the pump to each five gallons will supply the necessary dope. An over-supply does not result in any injury, and an under-supply would quickly be shown in the knocking of the engine, so that mistakes would not be serious. The two flasks would run a Cadillac car 7,500 miles, so that the recharging feature would not be serious.

"Without dope the car could be operated successfully at half throttle, i.e., would not be useless. With the dope, the car would have an additional 29% horsepower and gasoline consumption would be materially reduced."

The Court: 25 per cent instead of 29 per cent.

Mr. Hurd: Is it 25 per cent?

The Court: That is what my copy says.

Mr. Hurd: It may be. It is very hard to read.

The Court: I don't think it is material anyway.

Mr. Hurd: I don't think they did it anyway.

The Witness: They didn't, your Honor.

By Mr. Hurd:

Q. Mr. Sloan, I would like to ask you in connection with [fol. 2924] this, whether or not this procedure of putting a metallic bottle of this fluid in the gas tank was ever used?

A. That was never done, Mr. Hurd, but the contracts made with these oil companies, as I mentioned a minute ago, that contemplated the same type of thing only at the service station, but that was used only to a limited extent, but that particular process was not used at all.

Mr. Hurd: The next paragraph:

"In order to make this program effective, a plant of 100 gallons daily capacity should be erected. The next step in the program would be to try to introduce the dope as a commercial article supplied with the gasoline. It would require about 4,500,000 gallons per annum to dope the entire gasoline supply.

"Kettering would like to take up the question of manufacture with the du Pont Company representatives at an early date."

Then I would like to refer to a document which is marked du Pont Exhibit No. 65. If you have no objection, I will offer it with that designation, but as a General Motors exhibit. I thought it was in evidence. It is a memorandum of a conference between Mr. Kettering, Mr. C. S. Mott, and Mr. P. S. du Pont, dated July 12, 1922.

(Said document, so offered and received in evidence, was marked du Pont Exhibit No. 65.)

Mr. Hurd: I would like to call attention to certain portions of this document. The first paragraph is:

"Kettering proposed that the manufacture of dope [fol. 2925] be started as soon as possible by the du Pont Company in order to produce 100 gallons per day, or thereabouts, possibly working up to greater production, leaving to the future the determination of building of large plants capable of producing 8,000,000 gallons per annum, sufficient to dope all gasoline fuel in the United States:

"The Standard Oil people would like to get the first production, in order to dope fuel at Baltimore, Scranton and other points where trouble is experienced with existing fuels."

By Mr. Hurd:

Q. Which Standard Oil Company would that be, Mr. Sloan?

A. New Jersey.

Mr. Hurd: (Reading)

"Another alternative is to use the first dope in manufacture of pills to be used in Cadillac cars. These pills, made out of para toluidine, covered with paraffin, would be about 1" in diameter for a 5 gallon charge of gasoline."

By Mr. Hurd:

Q. Was that pill procedure ever adopted?

A. No, it was not, Mr. Hurd.

Q. Do you recall whether or not the du Pont Company did undertake to duplicate the laboratory experiments that Mr. Kettering had conducted?

A. Yes, they did, Mr. Hurd, and they developed, as I recall, a recovery of bromine pretty much what we had accomplished in Research which I think was 85 per cent, which I think was a very good record.

[fol. 2926] Mr. Hurd: If the Court please, I would like to offer in evidence General Motors Exhibit No. 71 which is a report from Mr. Clements, Director of Research, to the Executive Committee of General Motors, dated August 2, 1922.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 71.)

By Mr. Hurd:

Q. Was Mr. Clements the Director of Research of General Motors?

A. Yes, he was the first assistant to Mr. Kettering.

Mr. Hurd: This document dated August 2, 1952, is headed, "Report of the Research Laboratories for the Month of July."

The sub-heading is, "Fuel Research Section":

"The month's efforts have been confined to semi-works production of lead tetra-ethyl. The entire process has been studied intensively, to eliminate cost. The du Pont organization has been brought into the work and they have duplicated our semi-works production very readily. Just now, we are counting upon the du Pont organization to collaborate with us on this new compound. This is the logical procedure, due to the fact that they have equipment and floor space suitable for this kind of work. The question of stability has been satisfactorily solved. Some of the other difficulties encountered, such as corrosion of spark plugs, [fol. 2927] are being very carefully considered. The results obtained during the month show reasonable progress."

I should like to call attention to Government's Trial Exhibit No. 615 which is another report by Mr. Clements, of the General Motors Research. It is dated September 5, 1922, addressed to the Executive Committee, and headed, "Report of Research Laboratories for the Month of August."

Under the heading "Fuel Research Section" there are several paragraphs. It is paragraph three that I would like to read:

"Production work on a small scale, using our sodium-lead and ethyl bromide process, was begun at the dye works of the du Pont Company. They are now producing about a gallon of lead tetraethyl per day."

Turning to the second page, paragraph No. 6:

"In view of the satisfactory progress that is being made on the production program and of certain problems incident to the use of lead compounds as anti-knock materials, it has been decided to drop production, as well as research on production here. Production will be continued at the du Pont Company, and research on methods of production will be actively

continued at the Massachusetts Institute of Technology. The research work at this laboratory will be concentrated on the solution of the spark-plug and exhaust-valve troubles that have been experienced in the use of lead compounds as anti-knock materials."

Then I would like to offer in evidence General Motors [fol. 2928-2929] Exhibit No. 72, a letter from Mr. Harrington to Mr. Kettering, which is dated September 12, 1922.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 72.)

I should like to offer General Motors Exhibit No. 73, which is a report from Mr. Clements, of General Motors Research, to the Executive Committee of General Motors.

[fol. 2930] By Mr. Hurd:

Q. Mr. Sloan, after the du Pont Company had reached this point in the manufacturing process, what, if anything, was done regarding the future manufacture of tetraethyl lead?

A. A contract was made between the du Pont Company and General Motors shortly after that. The contract was suggested by Mr. Kettering and was really required from the standpoint of equity for the du Pont Company because they were involved in expense of development work and they had no arrangement with us.

That contract was for what we call in industry a pilot or a semi-works plant, experimental plant, in other words. That contract carried the date of October 6, 1922. It contemplated the manufacture of 100 gallons a day of tetraethyl lead.

The contract further provided that the production processes were not to be released until further information had been obtained with respect to the spark plug difficulty that developed here.

Q. That is, you were going to defer the actual construction of the plant temporarily?

A. That is correct, Mr. Hurd. That release took place in

about February of 1923. At that time the du Pont Company constructed the plant on the basis of the October 6, 1922, contract.

Q. Mr. Sloan, who handled the negotiation of this 1922 contract?

A. The details of the contract were developed in this way: When it was agreed to make the contract, Mr. McEvoy, who was our patent counsel in Detroit, in collaboration [fol. 2931] with another executive in his department, Mr. Morrison, went down at my request to Wilmington and worked out the details of the contract with the people in Wilmington, I presume Mr. Harrington, who had charge of such matters in du Pont at that time.

They agreed substantially on the details of the contract. There were certain changes made, as I recall it, from the original draft developed by Mr. McEvoy.

Mr. McEvoy brought the contract to New York and I went over it in detail, and it seemed to me a satisfactory form of contract, though I recognize it was purely a pilot contract, and as a result of my approval of it, the contract was adopted by General Motors.

That was the first contract involving the production of tetraethyl lead; and incidentally, the last and only contract made between du Pont and General Motors. Further contracts were made later under different auspices.

Q. Did Mr. Pierre du Pont participate in the negotiations in any way?

A. My best recollection—it is awfully hard to go back 30 years and answer these detailed questions—I don't think he did, Mr. Hurd. I don't think he entered into the negotiations at all. He left those matters to me.

I remember I went into it, but I don't think he entered into the details of it at all. As a matter of fact, the whole contract was really formalized in Dayton under the conditions that I have outlined. My consideration of it was more or less perfunctory.

Q. Mr. Sloan, I show you Government's Trial Exhibit No. 618, and ask you if that is the contract to which you have been referring?

A. According to my best recollection, Mr. Hurd, this [fol. 2932] is the contract of October 6th, 1922, to which I have just testified.

Q. You notice that Mr. Pierre du Pont signed the contract in behalf of General Motors Corporation.

A. Yes. Well, I don't think that is inconsistent with what I have just said. I remember dealing with it in detail and recommending it to him. He probably signed it as a matter of corporation procedure.

Q. Do you recall who set up the meeting for the negotiations of the contract, the meeting between Kettering's representative and your legal advisor and the du Pont's?

A. That was at my initiative, Mr. Hurd.

Mr. Hurd: I would like to call the Court's attention to Government's Trial Exhibit No. 617, which is a letter from Mr. Sloan to Mr. Kettering; dated September 27, 1922, the first paragraph and a portion of the second:

"My dear Ket:—

"I was just talking over the telephone with Mr. Irene du Pont and he believes it would be desirable, as I think you do as evidenced by our discussion in Detroit week before last, that a more definite arrangement be made between the du Pont Company and ourselves relative to the work that they are doing.

"Mr. du Pont asked me when you were going to be in New York next and knowing you had promised to be here Friday of next week, October 6th, I have taken the liberty of making an appointment with Mr. Irene du Pont and Mr. Huntington"—

Should that be Harrington?

[fol. 2933] The Witness: It should be Harrington. He was the executive in du Pont in charge of that type of thing.

Mr. Hurd: (Reading):

"I believe it is, here in my office at 12 o'clock on Friday."

I should like to offer in evidence General Motors Exhibit No. 74, which is a letter from James McEvoy to Mr. J. W. Morrison, Delco Light Company, dated September 27th, 1922.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 74.)

Mr. Hurd: The first paragraph:

"I did not hear anything from Mr. Sloan about the proposed trip to Wilmington until today when he called me up to say that he desired us to be in Wilmington on next Wednesday morning, October 4th; that he thought it would be necessary to spend about two days there and then close the matter at New York in his office on Friday, at which interview he expected Mr. Kettering would be present."

By Mr. Hurd:

Q. This is the Mr. McEvey that you had work on the negotiations?

A. That is correct.

Q. And he was from your Legal Department?

A. Correct. He was in the Patent Department in Detroit. Mr. Morrison was his assistant in the Detroit area.

Q. Mr. Sloan, did you approve of having the du Pont Company manufacture tetraethyl lead?

A. I certainly did.

[fol. 2934] Q. What was the basis of your view on the subject?

A. In the first place, I recognized that the General Motors organization had no competence whatsoever in chemical manufacture. We were mechanical people dealing with metal processing. We had no knowledge of chemistry.

When I say that, that statement must not be confused from the fact that our Research had developed tetraethyl lead, and that might indicate a considerable amount of competence. But that was a Research problem. It was quite different having a technician familiar with such matters working with it as a Research problem and discovering something from the ability to manufacture that something after it becomes a reality.

In my operations with General Motors over the years, I have always taken the position against our stepping too far out of those things in which I felt we had competence. I felt there was plenty of opportunity in General Motors in the areas in which we normally operate.

So when this question arose, it seemed as if it was something we should not contend with. It was only indirectly related to the motor car industry anyway. It didn't involve

the manufacture of the motor car itself, so I took the position that we should not engage in that sort of thing, and I felt that the du Pont organization was completely competent to do so.

I had a full realization at the time, but not as full a realization as I had later, of the very great dangers in the manufacture of this material. I am not a chemist. I am not qualified to discuss chemistry. But I was informed that this process of making tetraethyl lead involved what we call a metallo-organic compound which had never been made in manufacture in the United States.

[fol. 2935] It was an entirely new venture, and I thought the du Pont Company had demonstrated by their wonderful war work their ability to deal with the problems involving dangerous materials, such as dynamite; and their well organized Research offered the best opportunity for us to produce tetraethyl lead and to put it on the market.

It must be appreciated that my interest in tetraethyl lead was to make a better and more efficient motor car. It was a by-product from my point of view, and in contact with the problems over the first few years, until it got thoroughly started, I always had in mind the importance of tetraethyl lead from the standpoint of the operations of General Motors.

Naturally, when you are investing capital in an enterprise, as we did in tetraethyl lead, you are entitled to a reasonable profit, but the profit that had been made in the manufacture of tetraethyl lead, however, it may be looked upon, from my point of view is entirely inconsequential. You can't ignore profit even if it's a nickel, but relatively it was inconsequential compared with the tremendous effect it had in broadening the automobile industry from the standpoint of technological progress involved in the better correlation between the engines and the fuel.

It is very difficult to one who does not understand these things, not seeing it from an understanding point of view, to realize how much the discovery of an anti-knock material has meant in the evolution of the automobile industry.

Q. I believe you testified that the corrosion problem was solved some time in 1923.

A. That is correct, Mr. Hurd. I have already testified [fol. 2936] that was one of the problems that arose, and it took about a year to do that. I think it was in February,

1923, that we released du Ponts on the experimental pilot plants.

Q. I show you a document which has been marked General Motors Exhibit No. 75 for identification, and ask you if that refreshes your recollection as to when the du Pont Company was asked to proceed?

A. It was March 29th, a little later than I thought. This is the official notification to the du Pont Company to go ahead on the anti-knock production as contemplated by the October 6, 1922, contract.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 75.

(Said document so offered and received in evidence, was marked General Motors Exhibit No. 75.)

Mr. Hurd: This is a telegram dated March 29, 1923, from Mr. Midgley to Mr. Harrington of the du Pont Company.

"It was officially decided this morning to go ahead with the anti-knock program as rapidly as possible. (Stop) Consequently this constitutes official notification that you are to get out one hundred gallons of tetraethyl lead per day as soon as possible. (Stop) Expect to see you Monday afternoon next week."

By Mr. Hurd:

Q. Now, you have already referred to entering into contracts with the oil companies. About how long after production was started by the du Pont Company did you start making contracts with the oil companies, if you recall?

A. To the best of my recollection, we began making the [fol. 2937] first four contracts quite early in 1923. I think quite a period of time elapsed before the fourth contract was made; according to my best recollection, it was made at the very beginning of 1924.

I may be corrected on that, Mr. Hurd. I am not too certain about the date.

Q. Mr. Sloan, I show you documents that have been marked for identification General Motors Exhibits 76, 77, 78, 79, and 80, and Government's Trial Exhibit 620, and ask you if those are the contracts which were made for the distribution of the fluid?

A. Those are the contracts about which I previously testified, Mr. Hurd.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibits 76 to 80, inclusive.

(Said documents so offered and received in evidence were marked General Motors Exhibits Nos. 76 to 80, inclusive.)

Mr. Hurd: The first document, Exhibit 76, is a contract dated September 29, 1923, between the Standard Oil Company of Indiana, and General Motors Chemical Company.

By Mr. Hurd:

Q. Mr. Sloan, what was General Motors Chemical Company?

A. It was an organization that was developed, the purpose of which really was to exploit tetraethyl lead commercially, but it never amounted to very much. It was soon liquidated, and that problem was taken over by other auspices in General Motors.

Mr. Hurd: Government's Exhibit 620 is the next document in order of time. It was an agreement between Standard [fol. 2938] and Oil Company of New Jersey and General Motors Chemical Company, dated January 7, 1924.

General Motors Exhibit No. 77 is another agreement with the Standard Oil Company of New Jersey, but is an agreement by General Motors Corporation merely guaranteeing the chemical company agreement.

General Motors Exhibit No. 78 is a contract between General Motors Chemical Company and the Standard Oil of Louisiana; and General Motors Exhibit 79 is the guarantee of that Louisiana contract.

General Motors Exhibit No. 80 is a contract between General Motors Chemical Company and the Gulf Refining Company. It is dated January 26, 1924, the latest date of the group.

By Mr. Hurd:

Q. Following the making of these contracts, were any requests made of the du Pont Company regarding changing their capacity?

A. Yes. In January, 1924, recognizing that in the meantime we had made these contracts, I instructed the du Pont Company to increase the capacity of the pilot plant, which was originally contemplated for 100 gallons a day. I have forgotten, Mr. Hurd, how much I increased it.

Q. Mr. Sloan, I show you Government's Exhibit,—Government's Trial Exhibit No. 625, which is in evidence here, and ask you if that is your instruction to the du Pont Company regarding increasing their capacity?

A. That is correct. This increase, Mr. Hurd, is measured in pounds. I referred to the capacity as measured in gallons. A gallon is equivalent to 13 pounds.

[fol. 2939] Mr. Hurd: I would like to call the Court's attention to the fact that the document is dated January 12, 1924.

By Mr. Hurd:

Q. Is that about the time—

A. That is the authorization to increase the capacity as originally contemplated by the October 6, 1922, contract.

Q. Mr. Sloan, subsequently, was any consideration given to the formation of a joint company to be owned by General Motors and the oil companies?

A. Yes, that involved a problem you asked me about at the beginning, the distribution problem, and there was some discussion that took place about making an agreement between the various oil companies. We were under some pressure by the Standard Oil of Indiana, and likewise by the Gulf people to let them into the thing, so to speak, but upon consideration, it was thought desirable for various reasons that an arrangement of that kind was not either feasible or desirable.

Q. Mr. Sloan, I show you Government's Exhibit in evidence No. 665, which is a resolution from the minutes of the General Motors Executive Committee, and ask you if that subject dealt with in that resolution is this joint program you have just described?

A. That is the same matter to which I just testified.

Mr. Hurd: If the Court please, I should like to refer to the first paragraph of that agreement, Government's Exhibit No. 665. This is from the minutes of the Executive Committee of General Motors, held February 27th, 1924, under the subject of Tetraethyl Lead.

"The President brought up for general discussion the question of our future policy in the development and marketing of Tetraethyl lead.

[fol. 2940] "The Committee was advised that in view of the enthusiastic reception of this material by the Oil Companies, it might be possible to work out a plan whereby a company could be formed to control our patents and the distribution of the material which would be jointly controlled by the large oil companies and ourselves."

By Mr. Hurd:

Q. Now, following the last of that program, was there anything further done regarding the formation of a company between General Motors and any of the oil companies?

A. Yes, Mr. Hurd. In 1923, the fact was developed with the Standard Oil of New Jersey. They had some studies made by a consulting chemist with respect to the production of tetraethyl lead, and as a result of the efforts of that expert, there was developed a process of manufacturing which contemplated the use of chlorine instead of bromine as a principal aid.

The Standard Oil of New Jersey got a patent on that, and in due course of time, it was demonstrated that that process was far more economical than the bromine process that was developed by General Motors Research in 1922, the spring of 1922, after the original concept of production based upon iodine was eliminated. That put Standard Oil of New Jersey in a very important position with respect to the manufacture of tetraethyl lead.

There was another consideration involved of important significance, and that is that it was recognized that the bromine was in short supply, and it looked for a time there [fol. 2941] as if the manufacture of tetraethyl lead would be limited because bromine was a bottleneck.

That was another reason why the development of the chlorine process by this expert of the Standard Oil of New Jersey was a very important thing in the development of the tetraethyl lead problem.

Q. What ultimately happened?

A. As a result of that, and discussions that took place around that point, it was suggested, and I think, according

to my best recollection, that Mr. Frank Howard made the suggestion—and I define Mr. Howard as the chief technical officer of Standard Oil of New Jersey—Mr. Howard suggested that General Motors and Standard Oil of New Jersey get together, and that idea or suggestion was very thoroughly discussed, and it appealed very much to me, because although it is hard to realize, considering all that had happened in the intervening three years, but at that time the whole subject of anti-knock materials was—it was not yet demonstrated.

The whole thing was in an evolutionary stage, and the material had to be accepted by the oil industry, and incidentally the public, and I thought we could take in Standard Oil Company of New Jersey as a partner.

The fact that they were in the thing in an important way would give the stamp of approval of the biggest oil company on the material; it would give us enormous prestige. In addition to that, they had this fundamental patent, or a patent which was pretty near fundamental on account of the cost factor, which put them in a good trading position—put it that way.

To make a long story short, in August of 1924 a corporation was formed which was called "The Ethyl Gasoline Corporation." That corporation was formed for the purpose of promoting the development of tetraethyl lead as an anti-knock compound.

That was the next step that was taken in the evolution of tetraethyl lead, Mr. Hurd.

Q. How was the stock of that corporation divided?

A. The stock was divided fifty-fifty, but previous to earnings applicable to stock, the General Motors Corporation had a royalty arrangement which gave them a certain royalty, on the material that was sold, ahead of the distribution of any remaining earnings on a fifty-fifty basis to the common stock.

Q. What was done with the patents that General Motors had?

A. All the patents that General Motors had, and all of the patents that Standard Oil had, which were a very considerable number, principally involving the ethyl chloride process, were assigned to Ethyl Gasoline Corporation.

Q. Do you recall whether any agreement was entered

into between General Motors and Standard of New Jersey regarding the formation of the Ethyl Gasoline Corporation?

A. Yes, preparatory to the organization of the corporation itself an agreement was made between Standard Oil of New Jersey and General Motors, outlining the general terms, the purposes, and general concept of what was contemplated to be undertaken when the corporation was formed.

Q. Who conducted the negotiations leading up to the agreement?

A. Well, I conducted the negotiations in a general way. The royalty arrangements, the formula, and so forth, were worked out by others in General Motors.

Q. And who from Standard Oil was in on the negotiations?

A. To the best of my recollection, Mr. Hurd, that was conducted by Mr. Howard and Mr. E. M. Clark. At that [fol. 2943-2945] time Mr. Bedford was Chairman, and Mr. Teagle was President. I don't think they had any part in the negotiations, according to my recollection.

Q. Did any representatives of the du Pont Company participate in the negotiations?

A. No, they had nothing to do with it. In fact, according to my best recollection, we didn't submit it, didn't submit the thing to them. It was our problem. We worked it out, and I don't think we even informed them of what we had in mind, according to my best recollection.

The Court: The Court stands recessed for fifteen minutes.

(Recess taken.)

The Court: Proceed.

By Mr. Hurd:

Q. Mr. Sloan, I show you a document that is in evidence as Government's Trial Exhibit No. 668.

Is that the contract which you entered into with Standard Oil of New Jersey for the formation of the Ethyl Corporation?

A. This is the contract to which you refer, Mr. Hurd.

Mr. Hurd: That is dated August 1, 1924.

[fol. 2946] By Mr. Hurd:

Q. Mr. Sloan, did you have any discussion with the Standard Oil Company of New Jersey with regard to the possibility of their manufacturing tetraethyl lead under the chloride process?

A. The answer is no, from the point of view of exactly as you frame the question—manufacture. The point was raised by the Standard Oil of New Jersey that they would like very much to set up a pilot plant, an experimental plant, of a very limited capacity to make tetraethyl lead under the chloride process that they developed, as I explained in my previous testimony.

Q. What was your position with reference to that?

A. Well, I felt it was an undesirable thing to do because I did not feel that the Standard Oil of New Jersey at that time had the competence to undertake a thing of that kind. As a matter of fact, at the time we are talking about, the Standard Oil of New Jersey was just organizing a research activity. They had no research at all previous to that time except a very limited activity that dealt with refining processes rather than scientific chemical work of this type.

Of course, since then, they have become very chemically minded through the development of things. However, it has always been my practice never to turn down anybody that wants to find out something about something.

Therefore, I agreed that the Standard Oil Company should set up an experimental plant of a limited capacity. [fol. 2947] to try out the ethyl chloride process, because I thought whatever came out of it we would probably learn something; and as a matter of fact, we did.

Q. When was it approximately that you agreed that they might do this?

A. That must have been shortly after the Ethyl Gasoline Corporation was formed. It must have been in the summer of 1924 or thereabouts, Mr. Hurd.

Q. Mr. Sloan, I show you Government's Exhibit 622, which is in evidence, which is a letter from you to Mr. Irene du Pont, in January of 1924, and I call your attention to the second page, the last sentence—

Mr. Harsha: Don't you mean June, Mr. Hurd? Is that 662?

Mr. Hurd: No, 622.

By Mr. Hurd:

Q. On the second page, the last sentence reads:

"If it develops that these people have a process which, due to the nature of same, it should be cheaper from the standpoint of manufacture, I personally would much rather obtain a license from them, pay for it and get the du Pont Company to use it in reducing the cost than I—"

Does that refer to Standard Oil of New Jersey?

A. That is correct.

Mr. Hurd: (Reading):

"—would to deal with the Standard Oil as a manufacturer."

Q. Does that correctly state your views as of that date? [fol. 2948] A. Yes, it does, and the background of that I have dealt with just previous to that question.

Q. Mr. Sloan, I show you Government's Exhibit No. 623, which is Mr. Irenee du Pont's reply to this letter, and is dated February 2, 1924. I call your attention to the first page of the document, particularly the second paragraph which is in quotes, and which is Mr. Irenee's suggestion as to what should be written to the Standard Oil Company.

It reads:

"We have contracted with E. I. du Pont de Nemours & Company for our estimated requirements of ethyl lead, believing that they are the best equipped company to handle complicated organic chemical problems. We, therefore, suggest that you get in touch with them to see if they are in any wise interested in your proposed method for the manufacture of that compound."

By Mr. Hurd:

Q. Did you follow Mr. Irenee's suggestion contained in that letter?

A. No, I did not.

Q. Did you have the du Pont Company negotiate with the Standard Oil regarding the process?

A. They did not.

Q. Mr. Sloan, I show you Government's Trial Exhibit No. 624, which is a letter from you to Mr. Ireneé du Pont in reply to the previous exhibit, 623, and which has attached to it copy of your letter to Mr. Senior of the Standard Oil Company of New Jersey. Does that represent the action which you did take at that time with reference to [fol. 2949] the Standard Oil Company of New Jersey?

A. That is correct, Mr. Hurd. That is my answer to the letter in which I did not agree with du Pont and took quite a different course.

Q. Now you have already testified that you did agree, in the summer of 1924, to Standard putting up a pilot plant. Is that what you called it?

A. Yes.

Q. What did you understand to be the reason for the construction of that plant?

A. I thought the reason was—I don't know that there was any specific reason that I could testify to. I think the purpose was they wanted to do it. There was no reason why they should not do it. I was against it in principle because I did not think they had the competence to deal with such matters, as I testified before.

I always took the position that as long as it is in the area of an experiment, let us go ahead and try and find out something.

Q. Did you understand that this plant was to be a permanent plant?

A. It was not contemplated in any way, shape or manner that it was to be a permanent plant. As a matter of fact, it was set up in temporary quarters that were allocated temporarily for the purpose, at the Bayway plant of the Standard Oil of New Jersey.

Q. Mr. Sloan, I call your attention to a document marked for identification as General Motors Exhibit No. 81.

Does this document relate to the proposed plant to be constructed by Standard Oil of New Jersey?

A. That appears to be the formal arrangement entered into, Mr. Hurd.

Q. You will note, Mr. Sloan, on the front page at the

[fol. 2950] upper right-hand corner, the words "Tetraethyl Lead Plant, Bayway."

Was that the location of the Standard plant?

A. That is correct, Bayway, New Jersey.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 81.

(Said document so offered and received in evidence was marked General Motors Exhibit No. 81.)

Mr. Hurd: I should like to call attention to the first paragraph. This is a letter from Mr. Howard of the Standard Oil of New Jersey to Mr. Mittnacht of the Ethyl Gasoline Corporation, dated September 29, 1924, and refers to the Tetraethyl Lead Plant, Bayway:

"Dear Mr. Mittnacht:

"This manufacturing plant is operated by the Standard Oil Co. (N. J.) for the account of the Ethyl Gasoline Corp. The approximate cost of construction of the plant when completed will be about \$50,000.00. The plant has an estimated capacity of 100 gallons of tetraethyl lead per day. Purchase contracts for materials have been made on the basis of six months' operation, beginning Sept. 15th, 1924. In view of necessity for using the space for other purposes, this should be regarded as the limit of life of the plant."

Turning now to the last page, paragraph 4:

"When the plant is shut down, on or about March 15th, complete statement will be made up and an adjustment reached of the accounts between the Standard Oil Company and the Ethyl Gasoline Corporation.

"The above proposals have been taken up separately with Mr. Maxwell, Mr. Kettering, and Mr. Midgley, all of whom approve of this method of handling the operation of this plant."

By Mr. Hurd:

Q. Mr. Sloan, you have referred to the fact that you still had some misgiving about Standard carrying on this experiment.

Q. I want to show you Government's Exhibit No. 661 which is a letter from you to Mr. Irene du Pont dated June 27, 1924, and I call your attention to the second page, paragraph No. 3, which reads:

"For psychological reasons we should permit the Standard Oil Company of N. J. to expend \$35,000 or \$40,000 of their own money to experiment with the 100 gallon a day outfit in one of their plants, I believe in Bayway, in a building which they could use temporarily for the purpose."

Does that correctly set forth your views as of that date?

A. Those were my views. That is correct, Mr. Hurd.

Q. To what extent were you motivated in disapproving of Standard's manufacture because you wanted to obtain business for the du Pont Company?

A. It had nothing to do with it whatsoever, Mr. Hurd.

Q. Mr. Sloan, as a result of your concern about the intention of Standard to go into production, did you make any suggestions with reference to taking medical precaution [fol. 2952] tions?

A. Yes. I made the suggestion that a medical committee be appointed, consisting of the chief medical officer of du Pont, Standard Oil of New Jersey and General Motors, and also Ethyl Gasoline was in it, for the purpose of making such surveys as they could make, making such suggestions and recommendations as they were able to make as a result of such survey, so we would have a better understanding as to the health hazard and could do what was the right thing to do, the best thing to do, to minimize such hazards.

Q. I show you a document marked General Motors Exhibit No. 82 for identification, which purports to be a letter from you to Mr. Kettering, dated June 23, 1924, and ask you if that contains your suggestions regarding the appointment of a medical committee?

A. That is correct, Mr. Hurd, except I stand corrected. I didn't recall the date. Ethyl Gasoline was not in it because Ethyl Gasoline was not formed yet.

The medical committee was confined to Standard Oil of New Jersey, du Pont and General Motors.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 82.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 82.)

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[fol. 2953] Then I would like to offer in evidence General Motors Exhibit No. 83, which is a letter from Mr. Harrington of the du Pont Company to Mr. Sloan, dated June 30, 1924, seven days after the prior letter.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 83.)

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[fol. 2954] I also offer in evidence General Motors Exhibit No. 84, which is a letter from Mr. McKnight of the Standard Oil Company to Mr. Howard of the Standard Oil Company, dated June 24, 1924.

(Said document so offered and received in evidence was marked General Motors Exhibit No. 84.)

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[fol. 2955-2956] By Mr. Hurd:

Q. Mr. Sloan, do you recall whether or not the du Pont Company tried out the chloride process that Standard Oil had?

A. I believe they did.

Q. Do you recall at whose suggestion they tried out that process?

A. I think that was made at the suggestion of Mr. Howard of the Standard Oil of New Jersey. That is according to my best recollection.

Q. Mr. Sloan, I would like to show you a document marked General Motors Exhibit No. 85 for identification, which purports to be a letter from you to Mr. Howard, dated May 6, 1924.

Do you recall that letter, Mr. Sloan?

A. I do recall that letter, Mr. Hurd.

Q. Does that deal with the subject of having the du Pont Company investigate the chloride process?

A. That is correct, Mr. Hurd.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 85. This is a letter from Mr. Sloan to Mr. Howard, dated May 6, 1924.

(Said document, so offered and received in evidence was marked General Motors Exhibit No. 85.)
[fol. 2957] By Mr. Hurd:

Q. Mr. Sloan, I show you a document marked General Motors Exhibit No. 86 for identification, which purports to be a letter from Mr. Howard to you, and ask you if that is the reply you received to your letter of May 6?

A. What was your question—with respect to identification?

Q. Is that Mr. Howard's reply to your letter of May 6?

A. That is correct, Mr. Hurd.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 86, which is a letter dated May 8, 1924, from Mr. Howard to Mr. Sloan.

(Said document so offered and received in evidence was marked General Motors Exhibit No. 86.)

Mr. Hurd: I should like to read the last paragraph:

"In the meantime, I hope that Mr. Harrington, of the Du Pont Company, will be able to make a full investigation of our chloride method of manufacture; and I have given instructions to our Research Laboratory to see that he gets complete information on this, in the event that he is unable to begin on the matter until after my departure on Saturday."

By Mr. Hurd:

Q. Mr. Sloan, in the contract that was entered into between Standard Oil and General Motors before formation of Ethyl Corporation, I believe there is reference to the erection of an additional 1,000 gallon plant by the du Pont Company on the chloride process.

. Do you recall whether you had any discussions with the [fol. 2958] Standard Oil representatives regarding the du Pont Company constructing a new plant to use the chloring process?

A. To my best recollection, Mr. Hurd, that suggestion

came from Mr. Howard of the Standard Oil of New Jersey, that they erect a thousand gallon plant.

Q. That the du Pont Company erect the plant?

A. Yes. I am quite certain I am correct in that.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 87, which is a communication from Mr. Howard to Mr. Moffett and Mr. Clark.

(Said document so offered and received in evidence was marked General Motors Exhibit No. 87.)

By Mr. Hurd:

Q. Who was Mr. J. A. Moffett, Jr.?

A. Mr. Moffett was vice-president of the Standard Oil of New Jersey in charge of what they call "marketing." We call it "distribution."

Q. Who was Mr. E. M. Clark?

A. Mr. E. M. Clark was a director of Standard Oil of New Jersey. He was serving as—what is the date?

Q. June 26, 1924.

A. He was an executive of Standard Oil of New Jersey, on the technical side. He subsequently became a Director of Ethyl Gasoline Corporation, representing Standard Oil of New Jersey.

Q. I would like to call attention to the third page of the document, paragraph No. 2:

"100-gallon plant, chlorine process, to be installed at the Bayway refinery for the account of the Foundation Company."

[fol. 2959] What was the Foundation Company?

A. That was the name he used to indicate the Ethyl Gasoline Corporation. It had not been organized yet, and it had no name, so we called it the Foundation Company.

Q. And that was the plant that Standard was putting up at Bayway Refinery?

A. That's right.

Mr. Hurd: Then dropping down to the next paragraph:

"This 100-gallon chlorine process plant has a double purpose: first, to afford the experience basis for future construction on this process; and, second, to provide

an additional 100 gallons of tetraethyl per day for the end of the peak season, September and October, and for as much additional time as may be required in view of the market.

"3. Two additional large-scale chlorine process plants should be laid down as soon as possible, to be ready to begin operations before the gasoline season opens in 1925. It is suggested that one of these plants, of 1000-gallons daily capacity, be located at Penns Grove, to be operated by the du Pont Company, and that the second plant, of 500 gallons daily capacity, be located at some other point determined by a study of freight relationships, to be erected and operated by the Foundation Company."

By Mr. Hurd:

Q. Mr. Sloan, after the formation of the Ethyl Corporation in the summer of 1924, what became of the 1922 contract between du Pont and General Motors?

A. That contract was cancelled by agreement, and a new [fol. 2960] contract was made carrying the date of October 10, 1924, which contemplated the further production of tetraethyl lead on a considerably different basis.

Q. I show you Government's Exhibit No. 675, and ask you if that is a copy of the October 10, 1924, contract with the du Pont Company?

A. This appears to be the contract of October 10, 1924, to which I just referred.

Mr. Hurd: If the Court please, I should like to call attention to the fact that this contract is between the du Pont Company and the Ethyl Gasoline Corporation, and that it is not an exclusive contract.

By Mr. Hurd:

Q. Mr. Sloan, when the Ethyl Corporation was formed, did it have any business head or business executive heading up the company?

A. No, it didn't. Mr. Kettering was the head of it, and the president, and he, of course, was a scientist. I think Mr. Midgley was vice president, and he was a scientist.

There was another individual, a man by the name of Maxwell. He was a sort of assistant to Mr. Midgley. I am not certain what his background was. I think he was more on the business area. I am not certain of that.

Q. Did you do anything to have a businessman or business head for the company?

A. Well, I was very much dissatisfied with the setup from an organization point of view because I realized that Mr. Kettering and Mr. Midgley had their responsibilities, and they needed somebody around during the operation of the newly formed corporation, the Ethyl Gasoline Corporation, in a businesslike way.

I raised that question, and upon doing so, Mr. Kettering was quite antagonistic to it, so I let the thing go along [fol. 2961] for some while. It is generally my custom, when I get some resistance, to back out of it and try to do a selling job rather than force the issue. Early in the next year, that would be 1925, I took it up more vigorously, and consulted Mr. Teagle of the Standard Oil Company of New Jersey, president at that time. He agreed with me that we ought to have a business executive. To make a long story short, I suggested a candidate, a man by the name of Webb. Mr. Webb was counsel of General Motors in Detroit, and I presented Mr. Webb's name. Mr. Webb went to see Mr. Teagle, and after considerable discussion and conferences, the Standard Oil Company of New Jersey agreed that Mr. Webb was a desirable candidate for the presidency of the Ethyl Gasoline Corporation, and Mr. Webb became president of that corporation around about April 1st, 1925.

Q. Had Mr. Webb ever been connected with the du Pont Company in any way?

A. No relation to the du Pont Company.

Q. Did you also send Mr. Webb to see Mr. Irenee du Pont before he was elected president?

A. I think I may have done so because Mr. du Pont was a director of the Ethyl Corporation at that time, and picking out a president was quite an important thing, and I may have submitted his name to him. I don't recall, Mr. Hurd, whether I did or did not.

Q. Mr. Sloan, I call your attention to Government's Exhibit No. 678, which is a letter from you to Mr. Irenee du Pont, dated March 28th, 1925, and ask you if that re-

freshes your recollection as to whether you had Mr. Webb call on Mr. Irene du Pont?

A. This appears to be a letter involving—

[fol. 2962] Q. I call your attention to the last paragraph:

"I want you to know the above for two reasons:—
First, because we have taken on a matter which I feel sure you have realized should have had attention before and, second, because Mr. Webb will call upon you in due course and I would appreciate it if you would discuss with him frankly with all the cards face up on the table, exactly what you think as to the whole situation so that he can get the benefit of all the atmosphere preparatory to submitting his recommendations."

Do you recall that?

A. I recall that. As a matter of fact, I should perhaps have testified before when I submitted Mr. Webb's name to Mr. Teagle, Mr. Teagle suggested that Mr. Webb make a survey of the situation, and make a report as to how he viewed the thing, and that last reference was to get the atmosphere, such as was available, of Mr. Irene du Pont.

Q. How he viewed what thing?

A. Pardon me?

Q. You said you wanted to find out his recommendations and how he viewed the thing. What "thing" do you refer to?

A. Mr. Irene and Mr. Webb? Mr. Webb?

Q. Mr. Webb.

A. I don't recall, Mr. Hurd, the report that he submitted in line with Mr. Teagle's point of view, but I think he must have submitted the report.

Q. I think you misunderstood my question.

A. I am sorry.

Q. I understood you to say that you wanted Mr. Webb to make a report showing how Mr. Webb viewed the thing.
[fol. 2963] I wondered what you meant by "the thing."

A. The outlook of the possibilities of the business, and how he thought it should be conducted, and any observation he might make in the premises. I again repeat, that was Mr. Teagle's suggestion.

Q. Mr. Sloan, I show you a document marked General Motors Exhibit No. 88 for identification, and ask you if you:

recall receiving this letter from Mr. Irene du Pont, after he saw Mr. Webb.

A. I recall that letter. This is really an approval of Mr. Irene du Pont as to the appointment of Mr. Webb as president of the Gasoline Corporation.

Mr. Hurd: I offer in evidence General Motors Exhibit No. 88, this exhibit.

(Said document so offered and received in evidence was marked General Motors Exhibit No. 88.)

[fol. 2964] By Mr. Hurd:

Q. Referring again, Mr. Sloan, to the Bayway plant which the Standard Oil put up, approximately how long did that run?

A. Not more than thirty days, Mr. Hurd.

Q. And what happened at that point?

A. Well, somewhere within the thirty days, a very serious accident happened in which five of the operators were killed, and the rest of the men concerned with the operation were very seriously affected health-wise, to the extent that—well, you might say they went crazy under the influence of tetraethyl lead.

They were sent over to Bellevue Hospital in New York, and it was a very bad situation that developed.

Q. Do you recall whether or not the Department of Labor of the State of New Jersey took any position with respect to the future operation of the plant?

A. Yes, the New Jersey Department of Labor forbade the operation of the plant, and not only that, but the health authorities of New York City forbade the use of tetraethyl lead. There was a professor, I think at Yale University, who came out with an attack against it, and the Gulf Oil Company, or the Gulf Refining Company, which was one of the oil companies that were distributing the product, came out [fol. 2965] with an announcement that they discontinued the distribution of leaded gasoline, as we used to call it, until the health hazards had been satisfactorily taken care of.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibits Nos. 89 and 90, which are respectively

communications from the Commissioner of Labor of New Jersey to Doctor Johns of the Standard Oil Company, dated November 19, 1924, and a letter dated December 2nd, 1924.

(Said documents were so offered and received in evidence were marked General Motors Exhibits Nos. 89 and 90, respectively.)

Then General Motors Exhibit No. 90, a letter from the Commissioner of Labor of New Jersey to Standard Oil dated December 2, 1924.

[fol. 2966] By Mr. Hurd:

Q. Mr. Sloan, I want to call your attention to Government's Trial Exhibit No. 709, which is a letter from you to Mr. Irenee du Pont dated December 4, 1924, particularly to the last paragraph appearing on the second page which contains the statement, "I think they have changed their viewpoint."

Whom do you refer to as "they"?

A. Standard Oil of New Jersey.

Q. (Continuing):

"—about an independent source of supply anyway, for which I am very gratified."

Going to the last sentence:

"Now that they have tried it and are satisfied, we can go on with the next thing."

I also want to call your attention to Government's Trial Exhibit No. 710, to the second paragraph, the second sentence which reads:

"duPont will always be the manufacturing agent of Ethyl Gasoline Corporation whether we make tetra-ethyl lead or whatever we make, now or in the future."

Will you state what your purpose was in making that statement?

[fol. 2967]. A. Well, I was, as I already testified here;—I had great confidence in the du Pont Company's competence

in a thing of this kind, and I felt that General Motors would be much better off dealing with them on account of their technical ability, and I was satisfied that they would, through their technical ability and competence—that they would always be able to make a price that was reasonable.

Q. What happened with respect to the continued manufacture of the lead by the du Pont Company after the Bayway catastrophe?

A. Well, production of tetraethyl lead by the du Pont Company was continued through the balance of 1924 and into 1925, up to May 3rd of 1925, at which time a meeting of the directors of Ethyl Gasoline Corporation took place, and the directors adopted the policy of discontinuing the manufacture and discontinuing the distribution of tetraethyl lead from that time on, and production ceased at the du Pont Company in accordance with the policy laid down by the directors at that date.

Q. At whose suggestion was the manufacture of lead terminated at that time?

A. It was practically the unanimous opinion of the board of directors of Ethyl Gasoline Corporation that that was the only thing to do. Mr. Irenee du Pont was a director at that time, and he did not agree with the policy, but outside of Mr. Irenee du Pont's point of view, it was the unanimous decision that was reached at that time, and no further tetraethyl lead was manufactured as a result of that decision.

Q. Mr. Irenee du Pont wished to continue the manufacture of it?

A. He wished to continue the manufacture of it. As a matter of fact, the business, although Ethyl Gasoline Corporation continued to sell ethyl gasoline during the period between the Bayway accident on May 2nd or 3rd, 1925—the business was falling off very rapidly due to the adverse publicity that had taken place in the meantime, to which I have already testified.

The action of the Gulf Oil Company and so forth, and Ethyl Gasoline Corporation was accepting a heavy monthly loss as a result of the diminution of the business, and it was clear in the early part of May that something had to be done about it, and what was done was indicated by the action of the directors discontinuing the whole operation as of that time.

Q. Did I understand you to say that all of the directors were in favor of the close down except Mr. Irene du Pont?

A. Except Mr. Irene du Pont, that is correct.

Q. And you did close down?

A. We did close down.

Adjournment.

[fol. 2970] ALFRED P. SLOAN, JR., called as a witness on behalf of the defendants having been previously duly sworn, resumed the stand and testified further as follows:

Direct examination (Continued)

By Mr. Hurd:

Q. Mr. Sloan, at the conclusion of yesterday's session you had stated that the manufacture and sale of ethyl gasoline were terminated in the spring of 1925. Following that was any investigation made regarding the hazards incident to the manufacture, sale and use of the ethyl gasoline?

A. There was, Mr. Hurd.

Q. Who conducted that investigation?

A. The Surgeon General of the United States.

Q. Do you know what Mr. Irene du Pont's attitude was towards having the Surgeon General look into this matter?

A. I think it was quite favorable. We were all favorable to it.

Q. Mr. Sloan, I show you a document that is in evidence as du Pont Exhibit No. 99-A; which is a letter from Mr. Irene du Pont to you dated December 6th, 1924. Do you recall receiving that letter?

A. I don't know if I do recall receiving that letter, but it appears to be authentic.

Q. This December, 1924, is prior to the date of the close down?

A. That's right.

Mr. Hurd: If the Court please, I would like to call the Court's attention to the third paragraph of this letter from Mr. Irene du Pont which states:

"From the point of view of manufacture of tetra-ethyl lead I would say that it is imperative that a competent man see the Surgeon General at once."

[fol. 2971] By Mr. Hurd:

Q. Mr. Sloan, do you know whether or not the du Pont Company did anything to indicate to the Surgeon General the procedure followed by that company in the manufacture of tetraethyl lead?

A. They did, Mr. Hurd. There were conferences arranged with the Surgeon General in which Mr. Harrington of the du Pont Company was present, Mr. Kettering of General Motors, and Mr. Frank Howard of the Standard Oil, for the purpose of presenting the facts and circumstances to the Surgeon General.

Q. Mr. Sloan, I show you two documents that are marked General Motors Exhibits Nos. 91 and 92 respectively for identification, which are excerpts from the minutes of the Executive Committee meeting of General Motors, the first one in June, 1925, and the second one in October, 1925.

Will you look at Exhibit No. 91 and tell me whether the Surgeon General's investigation that is referred to in that document is the investigation of the manufacture and use of tetraethyl lead to which you have referred?

A. That represents the action I have just testified to.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 91, and I would like to—

The Court: What number?

Mr. Hurd: 91.

This is from the minutes of the General Motors Executive Committee on June 23, 1925, under the heading, "Ethylized Gasoline":

"The President—"

[fol. 2972] By Mr. Hurd:

Q. That would be yourself at that time, Mr. Sloan?

By the Witness:

A. Correct, Mr. Hurd.

Mr. Hurd: (Continuing):

"The President told the Committee of the action of the Ethyl Gasoline Corporation in withdrawing ethylized gasoline from the market as a result of the pub-

licity campaign conducted by the New York World regarding the question of possible injury to the public health from the use of this compound.

"As is already known to the Committee, arrangements have been made with the Surgeon General of the United States to conduct an investigation as to the effect of this compound on the health of the public. The President expressed himself as being very hopeful that as a result of this investigation we shall very soon be permitted to resume the sale of ethylized gasoline and that its use will rapidly increase."

(Said document so offered and received in evidence was marked General Motors Exhibit No. 91.)

Mr. Hurd: I offer in evidence General Motors Exhibit No. 92, which contains excerpts from the minutes of the Executive Committee of General Motors on October 21, 1925, after the Surgeon General had been operating for some time.

(Said document so offered and received in evidence was marked General Motors Exhibit No. 92.)

[fol. 2973] Mr. Hurd: Under the heading "Tetraethyl-lead—Ethylized Gasoline":

"The President reported that progress is being made by the U. S. Surgeon General's Committee appointed to investigate the question of injurious effects of ethylized gasoline. This Committee has visited the du Pont Company's Plant at Deepwater, New Jersey, and apparently was very favorably impressed by the precautions taken in the manufacture of this compound"—

By Mr. Hurd:

Q. Mr. Sloan, subsequent to this, was a report made by the Surgeon General?

A. A report was made by the special committee appointed by the Surgeon General, to him, in the very early part of the next year which would be 1926, submitting their conclusions, and in relation thereto certain recommendations as to what might properly be done which would permit the continued use of tetraethyl lead as an anti-knock compound in gasoline.

Q. And did the manufacture and sale of Ethyl gasoline resume shortly after that?

A. That is correct; shortly after that a contract was made to continue the production and Ethyl gasoline continued the sale of tetraethyl lead in accordance with the recommendations of the Surgeon General.

Q. At the time of the shut-down did you have a contract? Did Ethyl Corporation have a contract with the du Pont Company for the manufacture of tetraethyl lead?

A. We did.

Q. Do you recall whether you also had a contract with the Dow Chemical Company at that time?

A. We did.

[fol. 2974] Q. What happened to those contracts?

A. Those contracts were liquidated by negotiation.

Q. Who conducted those negotiations?

A. Ethyl Gasoline Corporation.

Q. And do you know what individuals?

A. More particularly Mr. Webb, the president. It was his responsibility. He was assisted particularly by Mr. Frank Howard and Mr. E. M. Clark, directors of Ethyl Gasoline Corporation.

Q. Did you participate in the negotiations?

A. I had very little to do with the negotiations. I knew about the general trend of them, but I didn't participate directly in the negotiations with the du Pont Company.

Q. Did you have any reason for not participating in those negotiations?

A. Well, in the first place I have never had much respect for my own ability as a negotiator. I am too apt to look at two sides of the question. On the other hand, Mr. Frank Howard was a very expert negotiator and I thought Ethyl Gasoline Corporation was in better hands if it was conducted by Mr. Howard, and Mr. Clark than myself. In addition to that Ethyl Gasoline had just been formed, and I was not particularly well acquainted with the Standard Oil executives that were on the Board.

Naturally, the du Pont side of it were friends of mine. I thought it would be better for them to conduct negotiations than that they might think that I was prejudiced. I wanted to put myself in a completely unprejudiced position. As years passed, I don't think I would have taken

that position, because I think the Standard Oil Company would not have possibly looked at it that way, but I feared that they might under such circumstances.

[fol. 2975] Q. Now, Mr. Sloan, the Government has introduced certain letters from you or to you.

I refer particularly to Government's Trial Exhibit Nos. 680, 691, and here is another one, 692, in which there was some reference to possible embarrassment to you, if you participated in those negotiations.

What was the embarrassment that was referred to in those documents?

A. That in negotiating with du Pont, Standard Oil of New Jersey might think they were friends of mine, as they were, and I might better leave it to them rather than to take the responsibility myself.

Q. You said that after you had an approval from the Surgeon General, a new contract was made with the du Pont Company?

A. A new contract was made, Mr. Hurd, early in January, 1926, after the report was submitted.

Q. To refresh your recollection, I will show you Government Exhibit No. 706, and ask you if that is the contract to which you are referring?

A. That is correct. That is the contract to which I referred.

Q. Will you look at the date of it?

A. The 31st of March, 1926.

Q. I believe you said it was January.

A. Well, it is a good deal to ask or expect of me to remember dates thirty or so years ago.

There was only one contract in that time area. There couldn't be any confusion about the contract.

Q. And that is Government's Exhibit No. 706?

A. That is correct.

Q. Did you negotiate that contract?

[fol. 2976] A. No, that was negotiated by Mr. Webb, who was president of the corporation, assisted by Mr. Howard and Mr. Clark.

Q. Subsequent to this, do you recall whether or not Ethyl Corporation had other contracts with the du Pont Company?

A. It had a series of contracts, Mr. Hurd, extending from

the year 1926 up to—I think the last contract that was made was January 1st, 1938.

Q. Did you participate in the negotiations of any of those contracts?

A. Very, very little. Most of those negotiations were very complex. They involved to an increasing extent chemical problems, with which I was not familiar, and I felt Ethyl Gasoline Corporation was in good hands in having the responsibility attached to Mr. Webb, the president, who was a lawyer and well qualified to deal with such matters, assisted by Mr. Clark and Mr. Howard, who were technically qualified to deal with the technical side of it.

My relationships with Ethyl from that time on were rather limited to that of a director and a member of the Executive Committee. I considered the contracts from that responsibility as they were presented to the Executive Committee of the Board, but I had practically nothing to do with the details that led up to a recommended agreement.

Q. Mr. Sloan, do you recall a problem arising in Ethyl Corporation with respect to whether the Ethyl fluid would be sold in bulk or whether it would be sold to the oil companies with requirements for maintaining certain standards?

A. That question came up through the discussions relating to the formation of Ethyl Gasoline Corporation. One of the objectives laid down in the agreement between Standard Oil of New Jersey and General Motors that led to [fol. 2977] the formation of the corporation was the idea that we should press forward for standardization.

I think I testified yesterday that in seeking a name for Ethyl Gasoline Corporation, Mr. Howard and I, who were very much interested in standardization, tried to think of some name that would involve standardization, but that was given up. But the question of standardization from the standpoint of the motor car industry and the oil industry together seemed very important to us.

Q. What do you mean by standardization?

A. Having a definite rating of anti-knock qualities that the engineers could work to from the standpoint of the compression ratio of the engine, so that they could be synchronized rather than working in the dark without any standardization.

Q. Did you follow the practice of having some standardization?

A. That system was followed. In the early days the standard was set at what we called 40 per cent benzol blend. Benzol was an anti-knock agent, and that established the standard.

Later on, through further development, a system was evolved which was finally termed octane rating. Today that is used almost exclusively. So that when an octane rating is mentioned, the engineer who designs the engine from the standpoint of the compression ratio knows exactly what he can do to synchronize the compression ratio of the engine with the available fuel. We continued that right up to today.

Q. To be sure that this is clear, did you require that the gasoline in which the ethyl fluid was used contain a certain amount of ethyl fluid in order to be sure that it would perform according to a certain test?

A. No, Mr. Hurd. It didn't work that way. We specified [fol. 2978] that the fuel that was sold under Ethyl brand should have certain anti-knock qualities, which was established by the octane rating of the fuel.

As I think I testified the other day, octane rating at the inauguration of the use of tetraethyl lead, was around 45, and we worked it up until now it is about 85 or 90.

Those who have a license to use tetraethyl lead were required to work to a certain octane rating, and that octane rating was moved up as the higher anti-knock fuels were available.

Q. Did the octane rating depend upon the amount of tetraethyl lead in the gasoline?

A. Both, Mr. Hurd, that and also the base fuel. In other words, as we moved up the octane rating and moved up the compression ratio to get the efficiency resulting from the octane rating, the oil industry developed revolutionary methods of cracking in which the base fuel was increased in octane rating, irrespective of the amount of tetraethyl lead. But when tetraethyl lead was added, it always gave an additional octane rating and enabled the engineer to use a higher compression ratio, resulting either in fuel economy or more power for the same size engine.

Q. What was Mr. Irenee dū Pont's attitude on this subject, if you know?

A. Mr. Ireneé took a different viewpoint. His idea was that we should sell tetraethyl lead as a commodity to the oil industry, subject of course to the rulings of the Surgeon General, and that the oil industry should do as it pleased and establish its own ratings, irrespective of any standardization by Ethyl Corporation.

Q. By saying you would sell it as a commodity, you mean you would sell it the way you would so much coal, or something of that type?

A. That is right.

[fol. 2979-2984] Q. And leave it up to the oil industry to use it as they pleased?

A. That is correct, Mr. Hurd.

Q. What position did you take?

A. I took the position that we should go the standardization route; Mr. Howard, technician for Standard Oil Company, felt the same way.

We both felt there was a great deal to gain in establishing ethyl as an anti-knock agent associated with a certain high rating, a higher rating than normal, of octane.

Q. Which route did you follow?

A. That is correct.

Q. I say which route did you follow?

A. We followed the—I am sorry—we followed the route of standardization.

Q. Do you recall having any correspondence with Mr. Ireneé du Pont on this subject?

A. I think there was probably considerable correspondence because he was quite an aggressive individual, and he had a different point of view.

Q. Mr. Sloan, I hand you documents marked General Motors Exhibits Nos. 94 to 103, both inclusive, and ask you if that is the correspondence you had with Mr. Ireneé or Mr. Lamot du Pont on this subject?

A. Just looking through them hurriedly, Mr. Hurd, it appears to be the correspondence relating to the standardization to which I have just testified.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibits Nos. 94 to 103, inclusive.

(Said documents, so offered and received in evidence, were marked General Motors Exhibits Nos. 94 to 103, both inclusive.)

[fol. 2985] By Mr. Hurd:

Q. The outcome of this dispute, I understand you to say, Mr. Sloan, you continued with the standard?

A. We continued with the standardization up to today.

Q. Mr. Sloan, at any time after 1926, when your manufacture and sale were resumed, did you give any consideration to what would happen to the Ethyl Corporation after the expiration of its patent?

A. Yes, I did, Mr. Hurd.

Q. About when was it that you started considering that [fol. 2986] subject, if you recall?

A. Sometime in the very early part of 1930, the idea came to me, and I wrote a letter to Mr. Webb who, you will recall, was president of the Ethyl Gasoline Corporation, stating my position in the matter, and making certain suggestions.

Q. I show you Government's Exhibit No. 748, and ask you if that is the letter to which you are referring.

A. That is the letter to which I just referred.

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[fol. 2987] By Mr. Hurd:

Q. Now, Mr. Sloan, following this, do you know whether anything was done by the Ethyl Corporation to protect itself after the expiration of the patents?

A. The contract, Mr. Hurd, that was made with du Pont by the Ethyl Gasoline Corporation for the protection of tetraethyl lead, which would start on a year-to-year basis, and I think some later contracts were for more than one year—those from that time on were directed towards protecting the long term future of the Ethyl Gasoline Corporation from the point of view of providing that the du Pont Company, under certain conditions, would provide the know-how for Ethyl to manufacture if it so wished. It was provided in such contracts, as I recall it, that were negotiated after the 1930's that continued until the end of 1937; a new contract was made at that time, coming into effect January 1st, 1938, and the point of that contract, du Pont retired as a principal in the manufacture of tetraethyl lead, and became an agent of the Ethyl Gasoline Corporation under the terms specified in the contract.

Ethyl Gasoline Corporation provided the capital, and leased the plant at Deepwater which they were using in the manufacture of tetraethyl lead at that point.

Then the fees, and so forth, were provided for by a formula, and that formula was suggested to us of the Gaso-[foi. 2988] line Corporation by Mr. Frank Howard of the Standard Oil Company whom you will recall was a director of the Ethyl Gasoline Corporation.

From that time on, the Ethyl Gasoline Corporation manufactured tetraethyl lead themselves, using du Pont as the agent to conduct the manufacturing operation.

Some years subsequent, five or six years, Ethyl took over the manufacture of tetraethyl lead at Baton Rouge, which was the second source of supply, and continued it from that time on its own responsibility.

Q. Do you recall about when it was that the patents expired?

A. The patents expired on or about the end of 1937.

Q. '47?

A. '47, I am sorry.

Q. Since that time do you know whether or not the Ethyl Corporation has itself engaged in the manufacture and sale of ethyl fluid?

A. Ethyl Gasoline Corporation, beginning January 1, 1948; has conducted on its own account the manufacturing operations, at Baton Rouge, Louisiana, and the du Pont Company has continued the production of tetraethyl lead at its plants at Deepwater.

Q. When these contracts were being negotiated in the middle 30's, leading up to Ethyl getting the know-how for manufacture, preparatory to its manufacturing itself, do you know what Mr. Lammot du Pont's position was as to whether Ethyl should manufacture ethyl fluid?

A. I think Mr. Lammot du Pont was very much against Ethyl manufacturing on its own account. I am quite certain he took a very strong position on that point.

Mr. Hurd: If the Court please, I would like to call the Court's attention to Government's Exhibit No. 781.

[fol. 2989] This is a letter from Mr. Lammot du Pont to Mr. Webb, President of Ethyl Gasoline Corporation, dated March 6th, 1936, and it shows at the top that a copy went to Mr. Sloan, Mr. Donaldson Brown, and Mr. Teagle.

Referring to the third page of the document, the last paragraph:

"I have told you on many occasions, have told Mr. Sloan and Mr. Brown on several occasions, and have told Mr. Teagle on at least one occasion, that it is my carefully considered opinion that Ethyl Gasoline Corporation would make a very grave error in undertaking the manufacture of tetraethyl lead. I wish to repeat that statement now and to make it a matter of record; and I am therefore sending a copy of this letter to the three gentlemen above mentioned."

By Mr. Hurd:

Q. After receiving a copy of this letter, what position did you take with reference to whether or not Ethyl should itself manufacture tetraethyl lead?

A. It didn't change my point of view at all. I thought they should manufacture tetraethyl lead.

Q. Therefore did you approve of the contracts providing for their manufacturing it?

A. I did.

Q. Mr. Sloan, you referred earlier to having a contract with the Dow Chemical Company which was liquidated during the period of the shutdown of the manufacture and sale of tetraethyl lead.

A. That is correct.

Q. What material is purchased from the Dow Chemical Company?

A. Bromine.

Q. And what was the position of bromine in connection with the manufacture of tetraethyl lead?

[fol. 2990] A. Well, it will be recalled that the first process for making tetraethyl lead after the iodine process was washed out, in the early part of 1922, we went to bromine, and bromine was in very short supply, and to make the situation worse, the so-called tetraethyl lead fluid which consisted of tetraethyl lead plus certain added parts to counteract the corrosive action of tetraethyl in the spark plugs of the engine, it was found that the best means of covering that point was bromine, so we had bromine required for the manufacture and for the use.

Bromine was used in the manufacture, and was recovered to a considerable extent, but the bromine that went out in

the tetraethyl lead was not recovered. Bromine being in very short supply, it looked as if at one time it would be the bottleneck in our ability to produce tetraethyl lead. We were buying substantial quantities from Germany, and in this country the Dow Chemical Company was the only source of supply. They were operating up in Michigan and they were taking chemicals out of deep wells that they were operating at that point.

Q. Do you recall whether or not the Dow Chemical Company subsequently discovered a procedure or process for getting the bromine out of sea water?

A. That is correct. They developed a process. In 1933, I think it was, Ethyl Gasoline Corporation and Dow Chemical Company formed a corporation called the Ethyl Dow Corporation, the purpose of which was to develop plant capacity for extracting bromine out of sea water.

Q. How was the capital stock of the Ethyl Dow Corporation divided, do you recall?

A. It was divided fifty-fifty. I think Ethyl Gasoline Corporation at the beginning took some preferred stock in addition to its fifty-fifty interest. The common stock was divided fifty-fifty.

Q. Was the du Pont Company consulted with reference to whether it was satisfactory for Ethyl to form this corporation with Dow Chemical Company?

A. They had no part in it. As a matter of fact, I don't think that they knew what was to be done until after it was done.

Q. Mr. Sloan, do you have any connection with the Ethyl Corporation today?

A. Not since the end of December, 1947.

Q. Were you a director up until December, 1947?

A. I was a director from the beginning up until that date, Mr. Hurd.

Q. You have had nothing to do with the corporation since?

A. Nothing to do with it.

Q. Mr. Sloan, I should like to refer to the amended complaint in this case, to Paragraph 70, the sentence which reads as follows:

"It was agreed among du Pont Company, General Motors and Standard Oil that the latter, in considera-

tion for receiving a 50 per cent stock interest in Ethyl, and thereby securing a right to one-half of the profits involved in the distribution of the ethyl fluid, would withdraw its demand to share with du Pont Company in the manufacture of tetraethyl lead."

Do you know of any agreement to that effect between General Motors, Standard Oil and du Pont?

A. I not only know of no such agreement, but the contract between Standard Oil and General Motors that led to the formation of Ethyl Gasoline Corporation specifically prescribes that Standard Oil shall have a right to manufacture.

[fol. 2992] Q. Has there ever been an agreement, to your knowledge, that Standard would not manufacture tetraethyl lead?

A. No such agreement whatsoever.

Q. Was there any understanding of any type that if Standard were permitted to have a 50 per cent stock interest in Ethyl Corporation that the du Pont Company could do all the manufacturing?

A. No such understanding.

Q. I now wish to refer to Paragraph 64 of the Complaint—

We seem to have a little competition.

The Court: This may be a good time to declare a recess. The court stands recessed for fifteen minutes.

(Recess taken.)

The Court: Proceed.

By Mr. Hurd:

Q. Mr. Sloan, I now wish to call your attention to certain portions of Paragraph 64 of the Complaint in this case:

"Du Pont Company entered into an agreement with General Motors to the effect that the latter would refrain from the manufacture of chemicals."

Have you ever heard of an agreement to that effect?

A. No, I have not.

Q. Continuing on with this paragraph:

"It was further agreed between the two companies that when General Motors made discoveries in the chemical field, it would inform du Pont Company of the findings and grant the du Pont Company exclusive [fol. 2993] development, production and exploitation with respect to such discoveries."

Do you know of any agreement between the two companies that if General Motors made discoveries in the chemical field, it would inform the du Pont Company of those discoveries and permit the du Pont Company to exploit them?

A. I know of no such agreement.

Q. I didn't get your answer.

A. I know of no such agreement.

Q. "It was also understood that if any of said General Motors discoveries were useable in General Motors operations, the du Pont Company would, after their development, make them available to General Motors Company for use upon an exclusive and preferential basis:"

A. I never heard of such an agreement.

Q. "It was further understood that if du Pont Company made a discovery in the chemical field which might be of use in the production of automobiles, du Pont Company would promptly inform General Motors of its findings, and grant General Motors preferential rights with respect to such discovery."

A. I never—I know of no such agreement.

Q. Mr. Sloan, let me ask you, did General Motors itself ever go into the manufacture of tetraethyl lead?

A. Will you repeat that question, Mr. Hurd?

Q. Did General Motors itself ever go into the manufacture of tetraethyl lead?

A. No, they did not.

Q. You have previously testified that after tetraethyl lead was discovered, you elected, at the suggestion by Mr. Kettering, not to have General Motors manufacture tetraethyl lead, and I believe you gave three reasons at that time in your testimony.

[fol. 2994] One was that General Motors was interested primarily in the engine improvement made possible by this discovery, rather than in the product itself.

Second, as I recall, was that the manufacture of tetraethyl lead would be a business foreign to the type of business conducted by your manufacturing operations; and third, that General Motors, you considered, was not competent to manufacture a dangerous chemical such as tetraethyl lead.

Now, Mr. Sloan, was there any other reason in your electing not to have General Motors manufacture tetraethyl lead?

A. Absolutely none.

Q. Were you influenced in any way by any feeling that there was some understanding between General Motors and du Pont that General Motors was not to go into the chemical field?

A. Absolutely not.

Q. After the discovery of tetraethyl lead, you have testified that you did ask the du Pont Company to manufacture the product; you answered, at the suggestion of Mr. Kettering, I believe you said.

A. That is correct.

Q. And as I understood your testimony, you gave two reasons for selecting the du Pont Company; first, because you considered them an outstanding chemical company; and second, because of their unusual experience in the handling of dangerous chemicals.

I now want to ask you whether there was any other reason for your selecting the du Pont Company to manufacture tetraethyl lead?

A. No other reason whatsoever, Mr. Hurd.

Q. Did you ask the du Pont Company to manufacture tetraethyl lead because you wanted to favor that company over any other chemical company?

[fol. 2995] A. Certainly not. I was interested in General Motors. My responsibility was General Motors. I had a large interest in General Motors, and my position as an industrialist entirely depended on General Motors, and nothing else. In all my life, I really lived General Motors.

Q. In making this decision not to manufacture in General Motors, and second, to permit the du Pont Company to manufacture, were you motivated by any interest other than what you thought was for the best interest of the General Motors Corporation?

A. No other interest than the interest of General Motors Corporation while my responsibility existed.

Q. Mr. Sloan, I now wish to turn to a new subject, that of automobile finishes. We have had some testimony in this case regarding the problem of finishing automobiles, in the pre-"Duco" days. I believe Mr. Lawrence Fisher testified to that. I wonder if you would tell us briefly what your own understanding was, and as to the problem of finishing automobiles before "Duco" was used?

A. Well, in the early 1920's, I adopted a practice from time to time to make extended trips throughout the territories, and contact in those trips a very large number of dealers, General Motors dealers, of course, the purpose being to get, directly, knowledge of what was going on in the field so that I could direct the administration of General Motors in the way of progress and development.

Naturally, in those field trips, in contacting the dealers, I was interested in all the limitations and difficulties that existed with respect to our products, and our general relationship with the distribution end of the business.

In those days, the most important problem we faced, [fol. 2996] from the standpoint of the quality of the car, from the consumer's point of view, was the finish of the car. People who bought the cars, especially the higher priced cars like the Cadillac, and paid several thousand dollars for them, could not understand why, after they had them a short time, that the finish would break down, and we would constantly be required to make good on the finishes, and at considerable expense to the dealer and incidentally ourselves.

Naturally, they did not realize that it was quite different a proposition between the working out of the finishes on an automobile compared with the same finish which we were using in the carriage days in the way of finishing fine carriages. Many differences in the operation arose which made the problem quite difficult.

It was probably a most significant question and annoying question from the standpoint of the consumer acceptance of our product that existed at that time.

We also realized its importance, and we had sort of dreamed, you might say, or hoped that some time, something would come along which would be permanent, where-

by cars could sit out in all kinds of weather without deterioration.

Of course, we had little realization when the time would come when that would be accomplished to the extent of the use to the point we have reached now.

The second significant point was the matter of production as distinguished from consumer satisfaction. In those days, we used finishes which came down from the old carriage days, and it took something like three weeks to finish a car throughout, with all the processes that it had to go through, and often when it was finished after three weeks, it was found defective, and the job had to be done again. [fol. 2997] If the weather was bad, with high humidity, it took longer.

It was a great burden, because it was a great burden on inventory, and naturally, we were seeking ways of improving it.

For instance now, today in General Motors, it might be said that we have a capacity of turning out 15,000 cars every 24 hours, and if you figure that it took twenty days of processing in the pre-"Duco" days, you see we would have something like 300,000 bodies in process, and I figured out the other day that if those were put end to end it would mean a line something like 600 miles of bodies in process before they could be shipped.

So the problem of automobile finishes at that time was highly important from the standpoint of consumer acceptance, and it was also highly important from the standpoint of the economics of the manufacturing process, and in addition to that, at that time cars in the low-priced field—I mean by that the Chevrolet and Ford type of thing—were always finished in black enamel. Why we could only make enamel black, I don't know, but anyway they were all black. Cars above that point were coming in colors, and of course it was only a question of time when the low-priced cars must come in colors too, which would exaggerate our problem, so it was one of the most important problems that faced us from those two counts, economic and sales acceptance.

Q. Well, what materials were used at that time for the color or finishes?

A. Just paint and varnish as we used in the old carriage days.

Q. What, if anything, did General Motors do in an effort to remedy this situation?

[fol. 2998] A. Well, at the end of December, 1921, at the suggestion of Mr. Clements who was Mr. Kettering's principal assistant in General Motors Research, a committee was set up to study the matter and see what might be done to develop or find other finishes that would give us a better result.

Q. Mr. Sloan, I show you a document marked General Motors Exhibit No. 104 for identification which purports to be minutes of the meeting of the Car Division Managers with the Executive Committee on December 1, 1921, and call your attention to the item appearing on the second page under the heading "Study of Enamel and Varnish Drying."

Is the committee there referred to the committee that you have mentioned that you caused to be set up, or that was set up?

A. That is correct, Mr. Hurd.

Q. And I show you a document marked General Motors Exhibit No. 105 for identification which purports to be a communication from Mr. Bassett to Mr. Kettering under date of December 29, 1921, and ask you whether or not the committee personnel there named were the personnel to be on this committee that was created?

A. That is the appointment of the members of the committee to undertake the study of enamels, varnishes, paints and so forth.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibits Nos. 104 and 105.

(Said documents, so offered and received in evidence, were marked General Motors Exhibits Nos. 104 and 105.)

Mr. Hurd: Referring now to General Motors Exhibit No. 104 which is the minutes of the joint meeting between Car Division Managers and the Executive Committee, December 1, 1921, the second page, under the heading "Study of Enamel and Varnish Drying":

"There was presented to the meeting a letter from Dr. F. O. Clements of the Research Division, as to the advisability of the Research Corporation undertaking

a study of enamel and varnish drying. After discussion, it was unanimously

RESOLVED, That this report be received, and the Advisory Staff requested to have a study of this kind made, limiting it to dope finishes, improved enamels, and methods of heating the ovens, the work to be carried on under the direction of an organization to be determined by Mr. Mott, as Head of the Advisory Staff, in conjunction with Mr. Kettering, and progress reports to be rendered to the Car Division Managers bi-monthly."

By Mr. Hurd:

Q. Mr. Mott was the head of the complete Advisory Staff at that time?

A. He was head of the Advisory Staff at that time, Mr. Hurd.

Mr. Hurd: And General Motors Exhibit No. 105 is a letter from Mr. Bassett to Mr. Kettering, dated December 29, 1921:

"Regarding the Committee that was to be appointed by Mr. Mott for the study of Enamels, Varnishes, Paints, etc.:

"It has been decided after conferring with you to appoint the following Committee,—

[fol. 3000] "F. O. Clements, Chairman,

E. L. Bergland"—

By Mr. Hurd:

Q. Who was Mr. Bergland, Mr. Sloan?

A. Mr. Bergland was on the Advisory Staff and he had charge of one of the divisions of the Advisory Staff.

Mr. Hurd: (Continuing):

"Mr. Rogers, Oakland

Mr. MacQuaid, Chevrolet

Mr. Weckler, Buick

"It was understood that Mr. Clements, of course, would have charge of the work for the General Motors

Research Corporation and would call on the other members of the committee as he requires them.

"The resolution as passed by the Car Division Managers at meeting held in Detroit on Dec. 1st calls for progress reports to be rendered to the Car Division Managers bi-monthly."

By Mr. Hurd:

Q. Do you know what Mr. Rogers' position was with Oakland at that time?

A. I can't say by recollection, but by assumption I imagine he was the man there that had charge of this type of thing.

Q. Do you know what Mr. MacQuaid's position was at Chevrolet?

A. The same answer.

Q. Do you know what Mr. Weckler's position was at Buick?

A. Mr. Weckler was in charge of manufacturing at [fol. 3001] Buick. He was a very important executive of the Buick Motor Division at that time.

Q. Mr. Sloan, do you recall whether or not you followed the work of this committee?

A. Yes, I followed it up from time to time because from my point of view, as I have already testified here, it was a very important thing for General Motors, and I was anxious to promote the problem and see what might be done to relieve the difficulties which I previously testified to here.

Q. Do you know whether or not this committee became known as the Paint and Enamel Committee?

A. It did so become known.

Q. At the time this committee was formed in December, 1921, did you know anything about "Duco"?

A. I don't think I did.

Q. Do you have any recollection as to when you first heard about "Duco"?

A. My recollection is not very strong, Mr. Hurd. I think it must have been sometime in the year 1922 that it first came to my attention.

Q. Do you know whether there were any problems involved in the use of "Duco" as it first existed?

A. Well, naturally, any product of that kind, Mr. Hurd, has to go through a development stage.

The first samples we got, as I recall it, were brittle. Sometimes they were not durable. All kinds of difficulties always arise that have to be worked out by collaboration between the producer of the material and the user. That is a normal process in all such development projects.

Q. Do you know whether or not "Duco" came to the attention of the Paint and Enamel Committee?

[fol. 3002] A. According to my best recollection, the Paint and Enamel Committee started to make a survey of the existing practices, hoping that they would find something that would contribute to our needs.

I also recollect that Mr. Kettering, who was naturally in contact with it, made the suggestion that a different type of material might be available, a quick-drying material. The committee, in its investigations of what was offered in the market, made inquiries of existing paint and varnish manufacturers as to whether they had anything in the line of synthetics along Mr. Kettering's suggestion.

In contact with the du Pont Company, the committee found that they had under development a product which looked as if it had possibilities. Samples were developed and collaboration was brought about between the du Pont Company as producers and our divisions as users in order to work out the development difficulties in the hope that sooner or later we could use that material as a substitute for paint and varnish.

Q. Do you recall when "Duco" was discovered?

A. "Duco" was discovered, Mr. Hurd, according to my best recollection, as a chemical reaction on July 4, 1920.

Following that, of course, it had to be developed into a material, and then it had to be adapted to certain specific uses, of which the automobile was a very special use.

In many things where we are developing new materials or new processes, we can make a test and get an answer very quickly, but the difficulty here was that they had to subject our samples to weather conditions and temperatures, cold and hot, humidity, and so forth.

It was quite a problem to bring "Duco" to the point where it was satisfactory, not only as a finish but also that [fol. 3003] fact was recognized by our division managers who had the authority to use it in their product.

Q. Do you recall whether or not Dr. Clements ever became convinced "Duco" was the answer to the finish problem?

A. Dr. Clements was following the matter up. He was chairman of this committee that we discussed a minute ago, and I think that early in the year 1923, Dr. Clements became convinced that we had in "Duco" what we were looking for.

Q. Mr. Sloan, I show you a document that is in evidence as Government's Exhibit No. 1228, and ask you if you have any recollection of receiving this letter from Mr. Clements? It is addressed to you.

A. That is the letter from Dr. Clements in which he indicates his conviction that we had what we were looking for.

Q. Do you recall whether or not you had any knowledge of the existence of "Duco" before this letter?

A. Oh, yes, I think I did. This was February 1923. I think I knew about it some time in 1922.

By Mr. Hurd:

Q. This is a letter dated February 22, 1923, from Mr. [fol. 3004] Clements, Director of General Motors Research Corporation, to Mr. Sloan:

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Q. Mr. Sloan, I show you Government's Exhibit No. 383, and ask you if that is the report which is referred to in this letter of February 22nd?

A. That is correct, Mr. Hurd.
[fol. 3005] Then, if the Court please, I should like to offer in evidence General Motors Exhibit No. 106.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 106.)

[fol. 3006] Mr. Hurd: This is a letter from Dr. Clements to Mr. Beardslee.

By Mr. Hurd:

Q. What was Mr. Beardslee's position?

A. He was secretary of the Executive Committee.

Mr. Hurd: It is dated March 10th, 1923:

"We have your letter, acknowledging our report on the 'Ducó' Enamels.

"This report was prepared simply to stir up increased activity in the experimental work that still lies ahead. We surely believe to the uttermost in this material and believe that it will work out to our benefit from the standpoint of durability. You understand that our sole reason for paying so much attention to this material is that we are anxious to get greater durability of finishes. Thus far, we have not been able to quite equal the costs of the paint materials, this is quite a detriment in the eyes of our various car units. However, great durability is worth something.

"I am glad that our report has awakened your interest."

By Mr. Hurd:

Q. Mr. Sloan, you have stated that you were interested in this problem of finishes, and also interested in "Duco".

Do you know whether or not Mr. Pierre du Pont was concerned to any extent with the problem of finishes that you [fol. 3007] have described?

A. He was because he was familiar with the needs of it just as I was.

Q. Were you interested in the "Duco" because it was a du Pont product?

A. No, Mr. Hurd. I was not interested for that reason at all. I certainly testified here as to the urgency of getting something better, and that was the sole consideration that actuated me in taking an interest in the development of "Duco". The fact that it was a du Pont product was purely incidental.

Q. Do you know whether or not Mr. Pierre du Pont was interested in this from a du Pont's products standpoint or General Motors?

A. I think you had better ask him, Mr. Hurd.

Mr. Hurd: We have a document from him that I think may answer our question.

If the Court please, I offer in evidence General Motors Exhibit No. 107, which is a letter from Mr. Pierre du Pont to Mr. Kettering, dated April 12, 1922.

(Said document so offered and received in evidence was marked as General Motors Exhibit No. 107.)

Mr. Hurd: (Reading):

"My dear Kettering:

"Has the Laboratory done any work on the finishing of sheet metal without the use of paint? For instance, could we secure a coating of lower oxide of iron on sheet metal, this coating to be used as a permanent finish? This lower oxide is, I believe, not easily oxidized, is of good color, and may be used for an acceptable finish. Might it not be possible to accomplish something in this way. Also would it be worth while experimenting on [fol. 3008] various qualities of iron and steel in an effort to find a grade that would not rust (such as Steelite)? For the moment, this method of procedure would appear almost as promising as the development of a satisfactory paint, varnish or enamel finish."

By Mr. Hurd:

Q. This is dated April, 1922. This is approximately two years after the discovery of "Duco"?

A. That is right.

By Mr. Hurd:

Q. Now, Mr. Sloan, I show you a series of documents; Government's Trial Exhibit No. 385, General Motors Exhibit for identification No. 108; General Motors Exhibit for identification No. 109; General Motors Exhibit for identification Nos. 110, 111, and 112.

These are all documents passing between yourself and Dr. Clements dealing with the general subject of automobile finishes and particularly "Duco".

Will you look at these and tell me whether or not you recall this exchange of correspondence?

A. These are various communications between Dr. Clements and myself relating to the progress that was being made of working out the "Duco" problem.

I indicate in these letters my very great interest in it for reasons I have already testified.

Q. Was there any occasion for this exchange of corre-

spondence other than your interest in the problem of getting a better finish?

A. Certainly not, Mr. Hurd.

[fol. 3009-3011] Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibits Nos. 108 to 112, inclusive.

(Said documents so offered and received in evidence were marked General Motors Exhibits Nos. 108 and 112, inclusive.)

By Mr. Hurd:

Q. First, before referring to them, I should like to call attention to Government's Exhibit No. 385, which is the first one of these documents.

Government's Exhibit No. 385 is a letter from Dr. Clements to Mr. Sloan dated April 18, 1923, and I call your attention to the first paragraph:

"I wish to thank you for your participation in our Enameling and Paint Committee conference yesterday morning. It was a great pleasure for us to discuss the points involved, having you with us to counsel and help formulate our future program."

Then referring to the second paragraph:

"The boys suggested that you discuss with Mr. Irene du Pont the question of keeping this development for the General Motors Corporation exclusively. Really, I do not believe that this need concern us very much."

By Mr. Hurd:

Q. Mr. Sloan, do you recall whether you did anything about asking for an exclusive on "Duco"?

A. No, I don't think I did.

[fol. 3012] By Mr. Hurd:

Q. What was this problem with respect to varnish, Mr. Sloan?

A. Well, the idea at that time was, after the "Duco" was applied, we had an additional coat outside, but upon further study it turned up that we couldn't get any varnish that would last. The varnish broke down, and the final program

was to eliminate the varnish and use the "Duco" entirely without the varnish as an outside finish.

Q. The varnish was merely the top over the "Duco"?

A. Over the "Duco", Mr. Hurd, that is correct.

Mr. Hurd: And in General Motors Exhibit No. 111, Mr. Clements replied to Mr. Sloan's inquiry about the varnish under date of July 3rd, 1923:

[fol. 3013] "You make inquiry about better varnishes. We do have materially better varnishes than those now used, to apply over 'Duco', that will add to the durability of the finish, but these more durable finishing varnishes require a longer time for drying and, up to date, the men at the plants have considered this extra time as prohibitive. Another objection to the use of finishing varnish over 'Duco' is the fact that no varnish will last as long as 'Duco', itself, and the time comes when the varnish begins to crack and fail and the appearance of the car is very poor."

By Mr. Hurd:

Q. Ultimately did you say they gave up the idea of putting varnish over "Duco"?

A. That is correct, Mr. Hurd. That is the present practice.

Mr. Hurd: The last letter in this series is General Motors Exhibit No. 112. This is Mr. Sloan's reply to Mr. Clements' last letter, dated July 20th, 1923:

"I thank you very much for your letter of July 3rd which is indeed very interesting. By all means keep me advised as to how this thing develops. It is very important, more so I think than perhaps any of us realize."

Q. What was the importance to which you were referring there, Mr. Sloan?

A. I have already testified that the significance of the [fol. 3014-3016] problem affected both the acceptance of the cars from the point of view of users and the cost of production on account of inventory and for other considerations.

Q. Now, Mr. Sloan, I show you a document marked Gen-

eral Motors Exhibit No. 113 for identification which is the report of the Paint and Enamel Committee on August 22, 1923. Do you recall receiving a copy of that document?

A. Yes, I remember this.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 113.

This document more or less traces the development of the work of the Paint and Enamel Committee, that that committee conducted.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 113.)

[fol. 3017] By Mr. Hurd:

Q. Mr. Sloan, do you recall whether there was any reluctance upon the part of any of the General Motors divisions to switch from their old varnish type paints to the use of the "Duco" or lacquer type paint or finish.

A. Well, I wouldn't say, Mr. Hurd, there was any reluctance because I think that all the division managers and other executives appreciated the significance of the problem just as much as I did.

It is hard to separate reluctance from responsibility. Responsibility of the general manager of a division is very great, and while he wants to make technological progress, and improve his product, he has got to be pretty careful that any decisions he has made lead to that end. For instance, a while ago we substituted a non-operative part of a car material to assist the war effort after the Korean war had developed. We worked it out and we thought in an entirely satisfactory manner, and it was generally approved, and it didn't work out just as we figured, and in the meantime we got quite a number of cars out, and we had to set up a reserve of \$15,000,000.00 to protect our service in correcting the difficulty.

I merely mention that because of the great importance of being sure you are right and at the same time to develop a proper balance with that, and technological progress, and to capitalize the progress just as soon as you can. I think all of our division managers had that very much in mind. Naturally, when you have several individuals as division managers, they think somewhat differently in dis-

[fol. 3018] charging that responsibility, but I wouldn't say there was any reluctance as such. It was caution and conservatism while at the same time wanting to adopt something that had been demonstrated not only much better, but it really had become a must for General Motors at that time.

Q. Mr. Sloan, I want to call your attention to Government's Exhibit No. 384, which is in evidence.

This is a letter from Mr. Rice of Cadillac. What was Mr. Rice with Cadillac?

A. He was general manager of the Cadillac Motor Division, Mr. Hurd.

Mr. Hurd: This is to Mr. Clements, and it is dated February 28, 1923.

I want to call attention to the third page of the document, second paragraph on that page:

"I am not lacking in faith that 'Duco' will be a great help to us. When it comes to paint, we should put it to every test possible including the alkali districts of the country and your statement that you are anxious to make all possible speed as you owed it to the du Pont Company who are besieged with requests for this material from various motor car companies makes me feel that the whole paint question is likely to be approached from the wrong point of view because of the apparent urge for a decision.

"I sensed that when we were called upon by Mr. Allen and others from the du Pont Company, the other day.

[fol. 3019] "I am heartily in accord with any of the divisions putting out a reasonable number of test jobs and keeping them under observation, as well as shipping them to all different parts of the country to see what will happen when in the hands of the public when exposed to alkali, mud and other troubles. But I think our committee should not permit itself to make its recommendations until we are quite sure and I believe the report by Mr. Mougey of February 21st. is sufficient to show that this policy should be followed."

By Mr. Hurd:

Q. Do you consider that that is consistent with the statement you made as to the position of the general managers?

A. That is a good illustration that the general manager has to exercise more caution in adopting a new product of this type.

Q. Do you recall whether or not the Buick organization had a similar approach to the subject?

A. I do.

Q. I show you a letter from Mr. Mougey to Mr. Allen dated November 26, 1923, which is marked General Motors Exhibit No. 114, and I offer the document in evidence, if the Court please.

(Said document so offered and received in evidence was marked General Motors Exhibit No. 114.)

By Mr. Hurd:

Q. Mr. Sloan, I should like to call your attention to the second page of the document, the paragraph at the middle of the page:

[fol. 3020] "At the Buick I had a very long talk with Mr. Weckler and Mr. Brown, Superintendent of their Body Department."

Then turning over to the third page, in the middle of the page:

"Mr. Weckler and Mr. Brown both stated that, if 'Duco' were to be adopted by Buick either entirely or for part of their production for the 1925 model, it would be necessary for them to immediately start through a small production of at least twenty cars a day, so that the method of handling the material could be worked out, operators trained, and then a new line-up made for handling the 'Duco' in the factory. They feel that if it requires as long a time to obtain material as has been spent in trying to obtain this 'Duco' ordered on October 5th, the source of supply is too unreliable to warrant their interest in 'Duco' for the 1925 model; but, if 'Duco' can be obtained upon short notice and if

the situation in regard to the raw materials and manufacture of 'Duco' is in such shape that they can be guaranteed prompt delivery of the desired amounts, both now and in 1925 production; they feel that it is very desirable to seriously consider 'Duco' for at least a part of their 1925 production.

"The other factor in their interest in 'Duco' hinges on how high a lustre they can obtain on the 'Duco', since they feel that a high lustre-job is absolutely necessary.

"Will you please let Mr. Clements know whether [fol. 3021] you believe that the situation in regard to 'Duco' is such that it is desirable for us to continue our efforts to interest Buick for the 1925 production."

Then follow five questions which Mr. Mougey asks Mr. Allen of the du Pont Company with reference to this ability to supply the product regularly.

To what extent is it important in the automobile industry to be sure that your supplier can keep you supplied with a particular paint material when you need it?

A. Well, the automobile industry differs from other enterprises very strongly on that point. For instance, you take a store like here in Chicago, Marshall Field's. They buy men's shirts and they don't get the right quality or the right delivery, it has little effect on their business, but the automobile business, industry and production-wise is a continuous operation. You cannot ship the car unless the car is complete, and any serious shortage of materials stops the whole plant operation, and is a very consequential thing to consider, so that in developing supplies in the automobile industry, the question of reliability of the supplier to deliver the goods at the right time and in the right quantity and of the right quality is generally speaking—I don't want to ignore the question of price—but it comes before price, Mr. Hurd, because the material must be there when it is needed.

When I was selling Hyatt bearings to Ford, I used to have a crew of men running freight trains from Newark to Detroit when I was short of production, and if I once held the Ford Motor Company up and shut down the business, [fol. 3022-3023] I might as well jump in the lake.

They would give me no further consideration. It is of vital consequence.

ADJOURNMENT

[fol. 3024] The Court: Proceed, please.

ALFRED P. SLOAN, JR., called as a witness on behalf of the defendants, having been previously sworn, resumed the stand and testified further as follows:

Direct examination (Continued)

Mr. Hurd: If the Court please, the last document we dealt with yesterday was General Motors Exhibit No. 114, which was a letter from Mr. Mougey of the General Motors Research to Mr. Allen of the du Pont Company, dealing with the subject of "Duco".

In that letter, Mr. Mougey requested Allen to answer certain specific questions regarding the ability of the du Pont Company to make deliveries of "Duco".

He also called attention to the fact that the Buick organization was disturbed about their inability to get "Duco" at the time they wished it.

In connection with that, Mr. Sloan explained that that dealt with the reliability of the supplier and his ability to deliver when the product was needed, which he said was the most important element in determining whether one could deal with a supplier, based on his experience at Hyatt.

The next document I wish to offer in evidence is General Motors Exhibit No. 115. This is the reply by Mr. Allen of the du Pont Company to Mr. Mougey's letter. It is addressed to Dr. Clements, who is Mr. Mougey's superior.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 115.)

By Mr. Hurd:

Q. Mr. Sloan, I show you what has been marked General [fol. 3025] Motors Exhibit No. 115. You will note at the top of the document that a copy went to you.

A. That is correct, Mr. Hurd.

Q. Do you recall the occasion for Mr. Allen sending a copy of his reply to you?

A. I rather think that was done, Mr. Hurd, because Mr. Allen and everybody else knew that I was interested in getting better finishes for automobiles, and I was doing everything I could to promote better finishes.

At this time it was recognized that du Pont met the objective of a technically better finish, so of course I was anxious to have it adopted as soon as possible, and any information he might have bearing on the thing, I think he thought it would be worthwhile sending to me.

Mr. Hurd: The last paragraph of the letter from Mr. Allen to Dr. Clements states:

"I trust that the above information will give you the assurance which you require as to our ability to meet all of the conditions involved in the use of 'Duco' by any or all of the units of the General Motors Corporation."

The letter specifically sets forth answers to the various questions that had been presented to him in Mr. Mougey's letter.

The next document which I wish to offer in evidence is General Motors Exhibit No. 116.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 116.)

[fol. 3026] Mr. Hurd: This contains the minutes of the Paint and Enamel Committee of the meeting held on January 22, 1924. The document itself is dated January 25, 1924, and it recites that the reply of Mr. W. P. Allen of the du Pont Company to a list of questions submitted by us was read.

The next document I wish to offer in evidence is General Motors Exhibit No. 117, which is a letter from Mr. Clements to Mr. Sloan, dated January 26, 1924, four days after the meeting of the committee.

(Said document so offered and received in evidence, was marked General Motors Exhibit No. 117.)

By Mr. Hurd:

Q. Mr. Sloan, do you recall receiving that letter?

A. I don't know as I do, in detail, Mr. Hurd, but it is very evident that I must have received it.

Mr. Hurd: I notice in the first paragraph of the letter that copy of the minutes of the Paint and Enamel Committee was enclosed. That would be General Motors Exhibit No. 116.

I would like to call the Court's attention to the second paragraph of this letter. This is a letter from Dr. Clements to Mr. Sloan:

"You will note that we have been promised adequate quantities of 'Duco', sufficient to meet any 1925 production demands."

Then turning to the second page, the bottom of the page:

"Buick has asked that all the various finishes in [fol. 3027] 'General Motors' be again 'cost accounted', so that we can determine the progress that has been made in reducing costs; for we are trying to secure a much more durable finish at less cost, if such be at all possible. Unquestionably, it has proven possible in the case of the Oakland."

Then the next paragraph:

"I noticed at the Detroit Show that Marmon had a number of cars finished in 'Duco' and there was another car on exhibit, finished by the Egyptian Lacquer Company, using a material of the same general nature as 'Duco'."

The document to which I wish to refer is Government's Exhibit No. 386, which is a letter from Mr. Sloan to Mr. Allen.

By Mr. Hurd:

Q. Mr. Sloan, do you recall writing Mr. Allen on this occasion?

A. I have read the letter, Mr. Hurd. What was your question again?

Q. Do you recall writing Mr. Allen?

A. Yes, I do.

Q. I would like to call attention to certain statements in this letter, Mr. Sloan.

Reading from the top of the letter:

"I have your letter of January 11th—" That refers back to the letter to Mr. Clements, General Motors Exhibit No. 115, copy of which went to Mr. Sloan—

"and thank you very much for the information therein contained. I personally am very much interested in [fol. 3028] your 'Duco' finish and without any disrespect to the very excellent people we have dealing with the matter, it is impossible to get a thing of this kind across without there are more or less objections and difficulties in the way of selling it to people who do not take kindly to making changes and who are liable to consider the always present first difficulties of insurmountable character and for that reason let me inject a little psychology into the situation which I hope will be helpful.

"Regarding Cadillac, they are a very conservative organization. I personally do not agree with them at all in the necessity of having a higher finish than they now obtain with finishing varnish. That might have been an argument a year ago but the Oakland Company blew it to pieces and it is no longer an argument to any reasonable person. I will see what I can do toward helping the situation along."

By Mr. Hurd:

Q. Do you recall, Mr. Sloan, what, if anything, you did to help the situation along with respect to Cadillac?

A. I don't remember, Mr. Hurd, this specific incident, but as I have already testified here, I was trying to help it along every way I could, and that simply reflects my general attitude toward the urgency of having a better finish and the fact that we had reached the point in early 1924 when it was generally agreed by Research and otherwise that "Duco" was the finish that would meet the objection.

Mr. Hurd: Referring to the second page of this letter, Mr. Sloan; the middle of the page:

[fol. 3029] "Regarding Buick, I think it would be very desirable if you could contact with Mr. Bassett of the Buick Company. I think it would help the matter along very much. They are used to contacting with the man that is at the head of the institution they are dealing with and although Dr. Clements and Mr. Mougey are doing excellent work in promoting this thing, at the same time I think a little atmosphere from you to Mr. Bassett direct would be helpful. I only make this as a suggestion."

Then going to the last paragraph:

"To sum up the situation, you realize as well as I do that if we are going to be extensive users of 'Duco' on increased lines for the season beginning August first, we ought to be right in it now and there ought to be a very complete understanding with all our Divisions as to the possibilities in the case and to my mind this should come directly from you who are the responsible agent in the matter rather than through a third party. I think also it would be helpful if you yourself could get the opinion of our different Divisions on the various subjects confronting them and if you care to do this and will then advise me what your impressions are, I shall be very glad indeed to do anything I can to push the matter along."

By Mr. Hurd:

Q. Mr. Sloan, this reference to the season beginning August 1st is for what purpose? What occurred on August 1st?

A. Well, at that time, Mr. Hurd, the automobile industry was in a model year. For instance, it was [fol. 3030-3031] talked about 1924, the model year in 1924; that a car would have to be in production in the late summer or early fall of the year before, 1923.

Therefore, the decision with regard to the various components of the car, finishes and so forth, would have to be dealt with in the early summer or late spring in order to adequately arrange for the production processes.

Q. Do you recall, Mr. Sloan, whether you ever heard as to whether Mr. Allen followed your suggestion of contacting the Buick management?

A. I rather think he did, Mr. Hurd. I am not too certain about it.

Q. I will show you a document marked General Motors Exhibit No. 118 for identification, which purports to be a letter from Mr. Allen to you dated January 31, 1924, three days after your letter to him.

Does that refresh your recollection?

A. This letter indicates very definitely that he did accept the suggestion. He said he was following this, and he would make the contact. I had forgotten that incident.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 118.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 118.)

[fol. 3032] Mr. Allen replied to Mr. Sloan under date of March 5, 1924, General Motors Exhibit No. 118-A, which I offer in evidence.

(Said document so offered and received in evidence, was marked General Motors Exhibit No. 118-A.)

Now, this is a letter from Mr. Allen to Mr. Sloan, dated March 5, 1924.

I wish to call your attention to the last paragraph beginning on the first page.

Mr. Allen states to Mr. Sloan:

"I wish to thank you very much for your sympathetic interest in this whole problem because it is very easy for those of us who are most directly concerned to become over-enthusiastic about a product which we make ourselves, and it is very re-assuring to have our own enthusiasms confirmed by the dispassionate judgment of others who have no direct interest in the matter."

Mr. Sloan did not reply immediately to that letter, but his secretary did, which is General Motors Exhibit No. 118-B which I offer in evidence.

[fol. 3033]. (Said document, so offered and received in evidence, was marked General Motors Exhibit No. 118-B.)

Mr. Hurd: General Motors Exhibit No. 118-B is a letter dated March 20, 1924, from the secretary of Mr. Sloan addressed to Mr. Allen, general manager of the Cellulose Products Department of du Pont.

Referring to the last paragraph of the letter:

"He—"

That is Mr. Sloan.

"—is very much interested in the subject—"

The subject being "Duco" as shown in the first paragraph.

"—and especially in Buick's attitude toward 'Duco' which he considers a very important matter. Will you be good enough to keep him advised of your negotiations with Mr. Bassett. He will appreciate very much your doing so."

The next letter which I offer in evidence is General Motors Exhibit No. 119.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 119.)

Mr. Hurd: This is Mr. Allen's reply to this letter from Mr. Sloan's secretary. It is addressed to Mr. Sloan, and turning to the first page, about half way down the page, the sentence beginning with "I believe."

[fol. 3034] "I believe that the whole Buick organization are convinced that the public will demand a more durable finish before long and it is Mr. Bassett's intention to begin the use of 'Duco' Finish on the new Light Six. His feeling is that it would be very unwise in the case of Buick to take hold of this matter in the way that Mr. Hannum took hold of it, as he still feels that some sales resistance may be encountered on account of the absence of a high varnish lustré."

By Mr. Hurd:

Q. Who is Mr. Hannum, Mr. Sloan?

A. He was general manager of the Oakland Division. Oakland used the "Duco" completely on their 1924 models.

Mr. Hurd: Government's Exhibit No. 394 is Mr. Sloan's reply to Mr. Allen four days later, dated March 25, 1924.

Mr. Sloan states to Mr. Allen of the du Pont Company:

"I have your letter of March 21st and have carefully noted contents of same. I am glad that you have seen Mr. Bassett and have gone into this matter so thoroughly. Mr. Bassett, I appreciate, undoubtedly has a better measure of the situation than I have, but my personal feeling is that there is plenty of evidence in the way the public is taking the Oakland finish to warrant the feeling that Buick could get away with it equally satisfactorily. Certainly, it is impossible to assume that if Cadillac can do it and Oakland can do it that Buick can not do it.

"I will make a note to discuss this matter at the next meeting of our Operations Committee with a [fol. 3035] view perhaps of developing a little more atmosphere in the mind of Mr. Bassett."

By Mr. Hurd:

Q. Do you have any recollection, Mr. Sloan, as to whether you did discuss it at the Operations Committee meeting?

A. I do not recollect specifically, Mr. Hurd.

Mr. Hurd: I should like to offer in evidence General Motors Exhibit No. 120, which is a letter a few weeks later from Mr. Bassett, President and General Manager of the Buick Company to Mr. Mott.

Mr. Mott, the Court will recall, is the man who appointed the Paint and Enamel Committee and who was head of the Advisory Staff of General Motors.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 120.)

Mr. Hurd: This letter, from Mr. Bassett to Mr. Mott is dated April 18th, 1924, and the first paragraph states:

"Mr. Allen, General Manager of this department"—
referring to "Duco" Department—

"from Wilmington, came to Flint a couple of weeks ago and we requested samples of paint from him in colors nearer to what we would like to use for 1925. We again asked Mr. Allen to come up here and be here today if possible, but he could not come and sent his assistant, Mr. Moosmann."

[fol. 3036-3037] Then dropping down four lines into the next paragraph at the end of the line:

"***we were advised by Mr. Moosmann not to attempt to go to all models on 'Duco' at one time."

Then turning to the back page of the letter, the first paragraph:

"Personally I feel that 'Duco' is a good thing and has come to stay, but I think we have all got to learn a little something about the proper method of handling it on cars that run into more expensive list prices."

The last document I wish to refer to in connection with this series is General Motors Exhibit No. 120-A for identification, which I offer in evidence.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 120-A.)

Mr. Hurd: General Motors Exhibit No. 120-A is the report by Mr. R. C. Williams of the du Pont Company to Mr. Flaherty, Director of Sales of the du Pont Company, and it deals with the subject of "Duco". It is dated May 2, 1924, but refers to "Report ending April 30, 1924."

[fol. 3038] By Mr. Hurd:

Q. Mr. Sloan, you have referred to the fact that Oakland was the first division to go to "Duco". Approximately when was that, do you recall?

[fol. 3039] A. That was in the early part of the year of

1924, which means they would have to take the position in the spring of 1924 and begin production in the late summer or early fall of 1924, to make it applicable to 1925, the following year.

Mr. Hurd: I offer in evidence, General Motors Exhibit No. 121 which is a letter from Mr. C. S. Mott, the man who appointed the Paint Committee. It is addressed to Mr. Rice and Mr. A. B. C. Hardy. It is dated August 31, 1923.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 121.)

Mr. Hurd: It states:

"I am enclosing herewith copy of report of Paint and Enamel Committee, which I presume will be self-explanatory.

"The Oakland is going to 100% 'Duco' for open cars, and I think that the idea has been sold to Mr. Fred Fisher and it is likely that Oakland will go to 100% 'Duco' on closed jobs. The matter is very important to each Car Division that they post themselves thoroughly regarding the advantages to be derived. It was suggested that this report be gone over very carefully. A representative of this Committee will undoubtedly attend the next Car Division Managers' meeting here in Detroit to be held in a couple of weeks, at which time the subject can be further discussed.

"In the meantime, Mr. Hannum"—

who was the Oakland manager—

[fol. 3040] "—has expressed his willingness and desire to cooperate with other Divisions desiring information and without doubt he would be very glad to have you and any of your experts visit his plant so that you may be satisfied as to the quality of work that he is producing and of any advantages that he can show you."

By Mr. Hurd:

Q. At that time Mr. Rice was the manager of the Cadillac Company?

A. Correct, Mr. Hurd.

Q. And where was Mr. Hardy?

A. Mr. Hardy was general manager of Olds.

Q. And what was the attitude of the public towards the "Duco" that Oakland tried out in 1924?

A. Very favorable.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 122 which is a letter from Dr. Clements, Director of Research, to Mr. Sloan, dated October 29, 1923.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 122.)

[fol. 3041] By Mr. Hurd:

Q. Did "Duco" become generally adopted in General Motors at a later date?

A. Yes, Mr. Hurd. It was generally adopted, well, quite universally adopted in the fall of 1924 applicable to the 1925 model year.

Q. Whose decision was it as to whether "Duco" would [fol. 3042] be adopted?

A. That would be entirely up to the general manager of the division, Mr. Hurd. I would have no position as far as decision in the matter. It had to be sold to the general manager of the division. He could use it or not as he saw fit, to the extent that he saw fit, and in the way he saw fit.

Q. Did you give any orders to the division managers with respect to going to "Duco"?

A. I did not. As a matter of fact, Mr. Hurd, I don't ever remember giving an order in General Motors, anyway. My technique was a selling technique.

Q. Do you know of anyone else in General Motors ordering the division managers to go to "Duco"?

A. Mr. Hurd, nobody in General Motors could give an order to the general manager of a division except myself or, of course, the executive committee. The executive committee didn't deal with such matters.

Q. You have testified that you did undertake to encourage divisions to go to "Duco". I believe one of the letters referred to your saying that you would be glad to try to push it.

Did you consider that you did push the use of "Duco"?

A. I did it simply by—the pushing referred to following it along, trying to eliminate the bottle-necks, trying to accelerate proper evaluation of the quality and advisability of adopting it as time passed on, and to do everything I could to accelerate the time when it could be used because after the research division had taken the position—I think it was the beginning of 1923—I was convinced that it was technically sound.

I have already testified to the great significance of it from the standpoint of customer satisfaction, and the value [fol. 3043] of it from the standpoint of a more economic setup of bodies, from the standpoint of cost, and also from the standpoint of capital investment.

Q. What, if any, reason did you have for pushing “Duco” other than your interest in improving the General Motors product?

A. I had no interest whatsoever. My effort was concentrated on delivering a better car to the consumer, better finish, at the right kind of a price.

Q. Mr. Sloan, was it unusual for you to take an interest in purchasing something that you thought would give General Motors a better product?

A. It was quite a common practice, Mr. Hurd, for me, if the problem involved the corporation as a whole. We all were doing that in General Motors.

We were all trying to push forward new things and new ideas as technology advanced, and I was no exception to the rule. My concept of my responsibility was not only to do what I could to develop a proper administration of the business, but also to do what I could in promoting the advancement of our products so that they would have greater acceptability on the part of the public.

As things of that kind came to my attention, I pushed them, put it that way—that is in the record here—simply because I was anxious. I realized that advancement of the corporation depended largely upon the advancement of the technological position of its products.

Q. Can you recall any other items that you have pushed in General Motors from the standpoint of improving the product?

A. Well, in the '20's—afterwards, too, but more particularly [fol. 3044] I am referring to the '20's—it was my duty

to go abroad occasionally in connection with the foreign operations of the corporation.

When I did so, naturally I tried to keep my eyes open for any new things that applied to the automobile industry.

In or about the summer of 1924 on one of those trips, I think it was 1924, I am not too certain, I came in contact with certain developments over there involving front wheel brakes.

At that time the braking of our cars was only on the two rear wheels, and of course in an emergency the brakes were applied on the two rear wheels only, and the car was likely to skid, especially if the balance wasn't exact.

I became convinced that four wheel brakes was a technological improvement, and when I came back I brought with me an engineer who had had a good deal of experience with that sort of thing over there in a development way.

I presented the project to the General Technical Committee, samples were made, tests were made. The general managers of the divisions were so impressed with the advancement that they almost immediately adopted front wheel brakes as a part of General Motors' cars, and we took the leadership in adopting that particular improvement.

A year or two later, on a similar trip, I came in contact with work that was being done in the way of front wheel springs, independent springs on the front wheels.

It will be recalled that at that time the springs of our cars were entirely on the rear wheels. I also brought back a technician who had done considerable development work in order to present all the facts to our technical people.

As the result of that, samples were built, conferences were held with our general managers, and General Motors went to independent springs on the front wheels, and we were the first producer to offer that to the public.

[fol. 3045] In 1926 or 1927, I became interested in the broad use of six cylinder cars. At that time cars in the low priced field—I mean Ford and Chevrolet type of thing—used four cylinder engines.

We had reached the point in the evolution of the motor car at that time where vibration had to be eliminated. Smooth riding, a smooth engine, became highly desirable.

Mathematically it is very difficult to balance a four cylinder car. It could be done but it was complicated and expensive. We had to do something with Chevrolet.

So I took a particular interest in the matter, developed all the facts and circumstances, and had some samples made. When the problem arose as to what Chevrolet would do, —I think I am talking now about the year 1926, but it might be 1927—I presented all the facts to Mr. Knudsen, who was general manager. Mr. Knudsen agreed that Chevrolet should go to a six cylinder car.

You will recall the pie chart we showed last week. In the year 1921, Chevrolet had five per cent of the business and Ford had fifty-five per cent of the business.

The change from the four to six cylinder engine and the leadership that it brought to General Motors completely reversed Ford's position, and Chevrolet has led ever since. As a matter of fact, Ford was out of business for two years, changing his model to meet the Chevrolet competition.

Another thing—I don't want to lengthen the record any more than you want me to, Mr. Hurd—an incident might be mentioned of a particular interest I took in an engineering development. I am confining myself to engineering.

In 1925 or 1926 I became interested in a diesel engine as a primary source of power. I knew, of course, of the engineering efficiency as compared with that which we used on motor cars.

I went to see Mr. Kettering and asked him why the diesel engine was not in greater use in view of its clearly demonstrated efficiency. He said it was because the engineers persisted in making it in a way that nature didn't intend to have it operate.

I said, "Well, if you tell us how to operate it, how it should be designed, we will go into the diesel engine business." We went into that, and with the development that ensued, as most everybody knows, in twenty years we put the steam locomotive out of business.

One other instance I might mention, and I think that will be sufficient, Mr. Hurd.

Some of us will remember that back in the '20's the gear shift consisted of a lever sticking out of the middle of the car, and you had to move it back and forth. It was very awkward, and prevented passengers moving across the front seat.

So I went to one of our engineers and asked him to make me a car with the gear shift under the wheel, as I thought it ought to be. He did so.

I presented it to our General Technical Committee, and it was immediately adopted, and since then you haven't seen a gear shift in the middle. It is all under the wheel.

Still another thing I will mention because it is important.

In the latter part of the 1920's I was interested in an automatic transmission. My conception was that the operation and transmission ought to be taken out of the consciousness of the driver, and I started an engineering [fol. 3047] development in the United States, one in England, and one in Europe, for research that might lead to the solution of the problem and in about 1940 we brought out an automatic transmission for the first time, and ever since that we have had the leadership in automatic transmission.

Now I want to mention the fact, Mr. Hurd, I am not mentioning those things to expand my responsibility or contribution to General Motors because I want to emphasize that the type of thing was going on through the whole corporation on the engineering side, and that is why we accomplished what we did.

My participation was just limited to a comparatively small number of things, which I contacted, and which I took a personal interest in.

My position in the development of "Duco" and tetraethyl lead was exactly the same thing. I was concerned with the interests of General Motors. I recognized as a technician what it meant in the future of the car and in popular application of the car if we could do those things, and that was my sole interest in promoting them.

Q. Mr. Sloan, once the divisions went to a lacquer as a finish, did you pay any attention thereafter to the source of supply that they used to obtain their lacquers?

A. No, I had no responsibility at all, Mr. Hurd, in such activity. My position was confined to other areas of administration.

The purchasing was always up to the general manager of a division, just the same as the engineering, accounting, and everything else was. My contact stopped really at the general managers.

Q. Mr. Sloan, I now wish to turn to another subject, [fol. 3048] one dealing with production forecasts. Has there been any practice in General Motors with reference to keeping in touch with suppliers or advising them as to what your production forecast would be?

A. Does your question relate to the relation between incoming material from suppliers and production forecast of the corporation?

Q. Yes.

A. Well, that is something like this, Mr. Hurd. There is no direct relationship between the production schedule and the incoming materials released by the purchasing department to the various suppliers. I have already remarked here that the industry is on a model year. That probably means when we start a model, we must create an inventory; we must maintain an inventory with relation to production through the year, and as the model year closes, we must liquidate our inventory with the objective of having practically no inventory on hand when we change the model, assuming the inventory is limited to that model.

The result is when we start on a new model, we have to release materials equivalent to the production for the current month, and three months beyond that. That is our practice. In addition, we have to release materials to create what we call a "float." A "float" is an inventory that has to be on hand to maintain a proper balance. The "float" varies tremendously, depending on the kind of material it is. If it is steel that is involved, with a long process in manufacture before it gets to the assembly stage, the "float" has to be bigger.

Not only that, but as we proceed through the model year with production schedules, it is very important because the automobile business is on a seasonal trend. In December and January, we have to build up large inventories [fol. 3049] of cars in the hands of our dealers, because the purchase of cars by the consumer is many times not until April and May; while we are doing that, we have to increase the "float" to protect the higher inventory, the higher production schedules.

As we move into the spring months, our production falls off, and when our production falls off, our "float" falls off.

Finally, when we come to the liquidation of a model, we have to reduce the incoming materials from our dealers, much below the product productions schedule that is forecast, because we have to eliminate the "float" when the model is terminated, so that sequence of operations follows through every year.

There is no relationship, or a limited relationship between our production schedule and the releases of our suppliers for income material to support that production schedule.

Here is another factor which is very important, and that is the scrappage, or the loss in material as we proceed through the model year. That affects incoming material from the supplier, but it has no effect upon the production schedule.

Still another thing that is very important is the service requirement. If we have a large number of cars out in the field, it is very important to have the service requirements which have to be recognized in relation to the incoming material, but it has nothing to do with the production schedule.

I have testified here when I was supplier for the Ford Motor Company; the question of service was one that was— When I was short of production, to keep Ford going, I [fol. 3050] would sometimes make a special trip to Detroit, using my influence with my friends to hold back on the service, and to support the production plants so I would have an opportunity to get more material into the plant.

All these factors have to be taken into consideration; as we go on an upward trend and more cars are being sold, we increase the inventory, and that increases the "float." All these things had to be taken into consideration in releasing incoming materials of our suppliers. It does not relate to specific production schedules.

I am sorry that I had to make such a complicated story, but your question suggested it.

Q. Well, your production schedule is merely one factor, as I understand it then, in determining when you want to receive a product from a supplier?

A. That is correct.

Q. What do you do to keep your suppliers informed as to what your requirements are?

A. That relates to the question you asked me last week, what we did to improve Mr. Durant's technique. One of the first things we tackled was that very problem and it was finalized after a good deal of development work by having a record three times a month of the unsold cars in the hands of our dealers. That was the foundation of the reconcilia-

tion or coordination of production with the needs in the field.

As that information became available, it would have an influence on our production schedules and our production forecasts—that was one factor that involved or determined the releases of incoming material from our suppliers. In addition to that, there was a further consideration which was important, and that was we were constantly studying the trend of consumer sales, and as the trend moved up, it had an influence on our production schedules. It had [fol. 3051] a corresponding influence on incoming materials from our suppliers.

Q. Mr. Sloan, I show you a document marked General Motors Exhibit No. 125, for identification, which contains statements taken from the General Purchasing Committee minutes, re Production Schedule Forecast, and ask you if these are illustrations of the type of thing you referred to, Mr. Sloan? Your purchasing agents were informed as to the production needs of General Motors?

A. Yes, sir, Mr. Hurd. That is simply a formal statement of what I have been trying to say.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 125.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 125.)

Mr. Hurd: This says that the subject was dealt with several times. The first one on April 18th, 1924, and Mr. Sloan is advising as to the procedures that have been set up.

Then again on July 2, 1924, he describes the indices that were set up.

And turning to the second page of the document, the top of the page:

“These indices would be used as a guide in setting production schedules from which the Purchasing Agents could reliably deal with suppliers as to quantities required.”

The matter is dealt with again September 5th, 1924, and in February, 1925.

[fol. 3052] By Mr. Hurd:

Q. Mr. Sloan, the Government has introduced certain exhibits, showing correspondence between you and Mr. Lammot du Pont in 1926, in which Mr. Lammot du Pont inquires or points out that his paint people are uninformed as to the trend of letting down of production and inquiring as to whether you have any objection to his showing them some production forecasts that he has received as a memorandum of some General Motors committee.

These are Government's Exhibits Nos. 363, 365, 366, 367 and 369 which I will show you, and ask you if you recall this incident?

A. Yes, I recall the incident, Mr. Hurd, of all of these letters referred to.

Q. It starts with 363, October, 1926. What was that incident, Mr. Sloan?

A. Pardon me?

Q. What was that incident?

A. Well, Mr. Lammot du Pont wrote me stating that he couldn't reconcile the information he had which involved production, with the incoming releases from our divisions for "Duco" material, and he gave me a lot of materials, and showed me why he couldn't reconcile it. Of course, I knew, as I testified here, that there was no way of reconciling one with the other, because a number of factors were taken into consideration by the divisions in making up the releases, which had nothing to do with the production schedule, but I tried very hard to develop a system that kept the closest possible correlation, as I have explained before and won't repeat, between the sale of the cars to consumer, production, and our supplier, and as a result of what he said, although I knew there was no reconciliation, I told him I [fol. 3053-3060] would look into the matter, and my idea was to make a check to see how the system was working.

I did that, and I found there were no complaints from suppliers on the point, so I didn't do anything more about the matter.

Mr. du Pont also wanted to know whether he could release the information he had to Mr. Allen, I think it was, and I told him that that was all right in this particular case because I was not giving him any advantage at all; and in fact, as a supplier with my experience as a supplier, I

was putting him at a disadvantage, because if he tried to reconcile his production with the figures that he had, and develop his production of "Duco" from that point, he would be misled, because there were so many other factors that didn't enter into it.

[fol. 3061] Q. Mr. Sloan, I wish to turn to the subject of synthetic rubber. Do you recall General Motors being interested at one time in the possibility of making synthetic rubber?

A. I do.

Q. Do you recall about when that interest occurred?

A. In 1925 to '26 according to the best of my recollection, Mr. Hurd.

Q. Under what circumstances did that subject come up?
[fol. 3062] A. The problem arose from the standpoint of research. Mr. Midgley who had developed tetraethyl lead in collaboration with Mr. Kettering, was interested in the possibility of synthetic rubber, and he approached me on the subject, and I felt that while knowing very little about the technical possibilities of producing synthetic rubber, as I stated here before, I have always been intrigued with research practices because so frequently you find out something that is of value, so to make a long story short, I authorized Mr. Midgley to proceed and devote time to an investigation of the fundamentals of synthetic rubber. That was done.

Q. Mr. Sloan, I show you a document marked General Motors Exhibit No. 128 for identification which purports to be a letter from you to Mr. Kettering dated January 18th, 1926, and ask you whether or not that is your authorization to Mr. Midgley to proceed with this work?

A. This letter deals with the incident to which I have just referred.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 128.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 128.)

By Mr. Hurd:

Q. Mr. Sloan, do you recall whether your patent attorney, Mr. McEvoy, took any position on the subject?

A. Mr. McEvoy was a patent attorney at that time, and he was rather negative to the proposal of Mr. Midgley. He felt that Mr. Midgley—well, to make a long story short—[fol. 3063] didn't know anything about it, and he thought that it was an unwise expenditure of funds. I disagreed with him, and I went ahead and authorized Mr. Midgley to spend—I made him a grant to spend \$60,000.00 on investigation of the possibilities of synthetic rubber.

Q. Mr. Sloan, I show you a document marked General Motors Exhibit No. 129 for identification which purports to be a letter to you from Mr. McEvoy, your patent attorney, dated March 11th, 1926, and ask you if that letter states the McEvoy position as you recall it?

A. That appears to be a letter indicating Mr. McEvoy's position, to which I have just testified.

Q. And you permitted Mr. Midgley to go ahead, notwithstanding Mr. McEvoy's objections?

A. I did.

Mr. Hurd: I offer in evidence, if the Court please, General Motors Exhibit No. 129.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 129.)

● By Mr. Hurd:

Q. I show you a document marked General Motors Exhibit No. 130 for identification, which purports to be a letter from you to Mr. McEvoy dated March 15, 1926.

Was that your reply to Mr. McEvoy's criticism?

A. That is correct. That was my position when I received Mr. McEvoy's letter.

Mr. Hurd: I call the Court's attention to the second paragraph of this letter:

"I think, considering Midgley's past performances [fol. 3064] and the confidence that we all hold in his research ability, that we ought not to dictate too closely because it is important to keep up his morale and all that sort of thing."

By Mr. Hurd:

Q. Now, do you recall whether or not Mr. Lammot du Pont took any position on the subject?

A. Yes, Mr. Lammot du Pont got into the picture, and he wrote me a letter criticizing my position in authorizing Mr. Midgley to spend \$60,000.00 on synthetic rubber. As I recall his position, he stated that du Pont was doing something in that line, although his investigation was limited to rather a narrow area, whereas he said so far as his information went, General Motors was attacking the subject along a broad front, and he made the point that one of us was wrong and that in general was the position Mr. Lammot du Pont took with regard to the \$60,000.00 expenditure.

Q. And what did you do about it?

A. I wrote him and said that I didn't agree with him at all, that if I had told him seven or eight years ago that General Motors Research was investigating the possibility of finding some material which would be added in small amounts to gasoline that would improve tremendously the relationship between the engine and the fuel, that he would have said probably the same thing, that we didn't have a proper chemical research, and that nothing would come out of it, and that I felt sure that that would be his position, that I felt that Mr. Midgley's outstanding contribution to the corporation and to the industry in the form of discovery of tetraethyl lead justified giving him an opportunity to see what he could do in the production of synthetic rubber which [fol. 3065] was a very important factor of cost in the production of General Motors cars.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 130.)

Q. Now Mr. Sloan, I show you Government Exhibits 888 to 890, inclusive, and 892 to 894, inclusive, and ask you if that contains the correspondence regarding Mr. Lammot du Pont's objections that you have just referred to?

A. This appears to be the correspondence to support my testimony on the subject.

Q. Do you recall whether or not Mr. Midgley at any time raised the question with you as to whether some outside chemist should look into his work?

A. Well, a couple of years more passed, and Mr. Midgley was working on the question of synthetic rubber in accord-

ance with the grant that I had made him. About two or three days later, he wrote to me and said that he thought it would be wise if I would have him submit the work that he had done for evaluation, either to the du Pont Company or to some chemist, in order to verify or pass judgment on the progress that he had made in synthetic rubber up to that date.

I declined to do so because I told him that a chemist in commercial practice or perhaps the du Pont Company wouldn't have the imagination and sympathy with the forward project of that kind that he had, and I preferred to leave the determination of what we did to his own judgment supported by Mr. Kettering.

Q. Mr. Sloan, I show you a document marked General Motors Exhibit No. 132 for identification, which purports to be a letter from you to Mr. Midgley dated March 8, 1927.

I ask you if that is your reply to Mr. Midgley to which [fol. 3066] you have referred, refusing to send the matter—

A. That is the letter to which I referred, Mr. Hurd.

Q. Do you recall whether or not Mr. McEvoy's position changed—Mr. McEvoy, your patent attorney?

A. No, I don't think it did, according to my recollection.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 132.)

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 131, which is a letter from Mr. McEvoy to Mr. Pratt, dated December 3rd, 1927.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 131.)

Mr. Hurd: I should like to call attention to the last paragraph:

"I feel exactly about this development of Mr. Midgley's as I have felt about his experiments in connection with synthetic rubber, namely, that he knows nothing whatever about the subject except what has been disclosed by other people and I would strongly urge, as I did over a year ago in connection with the synthetic rubber activities, that the whole operation be terminated."

By Mr. Hurd:

Q. Was the research that he was conducting for General Motors terminated at any later date or did it continue on?

A. It continued for some time. The research was conducted by Mr. Midgley through a research organization in Dayton, called the Thomas something company—the last name I have forgotten.

[fol. 3067] Q. Hochwalt?

A. Yes, that is right, and continued there for some time. Finally the principles of that research went into industry. Mr. Thomas became subsequently president of Monsanto Chemical Company, and Mr. Midgley carried on research in rubber on his own account with that change.

As far as I recollect, he continued that private venture until he died in 1944.

Q. Mr. Sloan, I show you two documents marked respectively General Motors Exhibits Nos. 135 and 134.

The first document, Exhibit No. 135, being a letter from Mr. Midgley to you dated April 5th, 1928, and Exhibit No. 134 being a letter from Mr. McEvoy to you, attaching a draft of a contract.

I ask you whether these documents reflect the termination as far as the General Motors was concerned of this synthetic rubber research?

A. Yes, they do.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibits Nos. 135 and 134.

(Said documents, so offered and received in evidence, were marked General Motors Exhibits Nos. 134 and 135.)

By Mr. Hurd:

Q. Mr. Sloan, do you recall the price of rubber in 1925 and 1926 when Mr. Midgley undertook this investigation?

A. I do.

Q. About what was it then?

A. Well, the price of rubber went up to over a dollar a pound as a result of what was known as the Stevenson Act at that time.

The Stevenson Act was promoted by the British govern-

ment, perhaps in collaboration with other governments, and [fol. 3068] the purpose of it was to maintain a high price for natural rubber. As a result of that, as I just stated, the price rose to over a dollar a pound and caused a good deal of commotion among users of rubber and also on the part of the United States Government.

Q. By 1928 when you finally terminated this research, what happened to the price of rubber?

A. The price had gone down very sharply. I have forgotten whether the Stevenson Act blew up or what happened, but anyway the price went down from something like \$1.10 a pound to something like 40 cents.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 133.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 133.)

Mr. Hurd: Exhibit No. 133 is a chart showing the monthly average of cotton and rubber wholesale prices from 1923 to 1932. It shows that in 1925, the price of rubber went up to a little over a dollar a pound, remained approximately at that point in early 1926, then dropped down to around forty cents a pound, where it remained until about the first quarter of 1928 when it dropped down.

By Mr. Hurd:

Q. After Mr. Midgley was given whatever accomplishments he had made in his research on this subject through this contract, did he continue on, on his own, with this Thomas-Hochwalt concern, looking for the solution?

A. I think he did. I am a little uncertain about that. I [fol. 3069] think he did for a while, up to the time that concern was dissolved, as I previously stated, when the two principals went into industry. I think after that Mr. Midgley conducted research on his own account.

Q. Did Mr. Midgley advise you from time to time after this as to what he had accomplished?

A. Just as a matter of general interest.

Q. I show you General Motors Exhibit No. 137 for identification, which purports to be a letter from Mr. Midgley to you, dated September 5, 1928, and ask you if that is the

report you received from him after he ceased for General Motors on this project?

A. That is the progress report of what he had accomplished as of September 5, and there are other unrelated matters there.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 137.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 137.)

By Mr. Hurd:

Q. As far as you know, did Mr. Midgley ever succeed in solving the problem?

A. He didn't succeed, Mr. Hurd, but he made—between the time that we are talking and his death in 1944—he made some very outstanding contributions to the evolution of synthetic rubber.

I think perhaps he made as important and outstanding contributions as anybody but he didn't live long enough to make it an accomplished fact.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 136, which is a letter from Mr. McEvoy, the patent attorney, to Mr. Pratt.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 136.)

Mr. Hurd: I refer to the second page of the document, where Mr. McEvoy quotes from a theme of Mr. Midgley's speech at proceedings of the Institute of Chemistry held at Evanston, Illinois.

The first paragraph, back page, quotes his theme:

"The quest for synthetic rubber may be compared to the quest for the Golden Fleece, the Fountain of Youth, or the Philosopher's Stone, in so far as the objective appears exceedingly unlikely of attainment, but the quest has been very fruitful in secondary results for the general improvement of rubber technology and scientific knowledge."

By Mr. Hurd:

Q. Mr. Sloan, I would like to ask you a few general questions.

If the Court please, some of these questions may slightly overlap some I have asked in the past. They relate to the complaint. I have asked some questions as to specific allegations, and I should like to ask these in the interest of having the examination complete.

Mr. Sloan, the complaint in this case charges in substance that approximately thirty-six years ago, a conspiracy was entered into, or an understanding, or an agreement, between the du Pont Company and General Motors Corporation, pursuant to which General Motors Corporation was to favor the du Pont Company by giving the du Pont Company its business on such products as the du Pont Company made, and that General Motors could use.

Have you ever heard of such an agreement?

A. I never heard of such agreement whatsoever.

Q. Or understanding or conspiracy?

A. Or understanding or conspiracy.

Q. Have you ever heard of anyone giving business to du Pont and General Motors because of the feeling that there was an obligation to favor the du Pont Company?

A. I never heard of any such thing recognized by anybody in the operation of General Motors Corporation, and certainly it was never recognized by myself.

Q. Have you ever known anyone in General Motors favoring du Pont Company?

A. I did not.

Q. The complaint also charges that approximately thirty-six years ago, this conspiracy or understanding or agreement provided that General Motors Corporation would refrain from going into fields, particularly the chemical field, in which the du Pont Company was engaged.

Have you ever heard of such a conspiracy, understanding, or agreement?

A. I never heard of any such understanding, Mr. Hurd. I don't know too much about conspiracies, so I cannot answer that.

Q. Do you know anything about General Motors refraining from going into any business because of a feeling that the du Pont Company was going into that business?

A. Absolutely not.

Q. In terminating the synthetic rubber business, were you in any way influenced by a feeling that the du Pont [fol. 3072-3076] Company objected to your work?

A. Certainly not, Mr. Hurd. As a matter of fact, I think you are mistaken that I terminated it. It was terminated on the judgment of Mr. Kettering and Mr. Midgley. The record shows very clearly that I left the determination to them.

Q. In determining not to go into the manufacture of Ethyl, were you in any way influenced by a feeling that it was a duty of yourself, as a member of the General Motors management to refrain from manufacturing something that the du Pont Company was manufacturing?

A. You said lacquer. Absolutely not.

Q. No, I said tetraethyl lead.

A. Absolutely not.

As a matter of fact, outside of the experimental contract that was made under date of October 10, 1922, for the initial production of tetraethyl lead, which I have referred to as a pilot plant, the determination of that was up to the Standard Oil Company of New Jersey through our partnership relationship with the Ethyl Gasoline Corporation to the same extent that it was up to us.

Q. Have you ever known of any understanding or obligation upon General Motors to divide any field with the du Pont Company?

A. I never heard of such a thing.

[fol. 3077-3078] Cross-examination.

By Mr. Harsha:

Q. I say, does Mr. Raskob's statement of the relationship existing between the du Pont Company and General Motors, as appears here, does that accurately describe the relationship?

A. Well, he says:

"My feeling is that the financial interests of both companies were so closely interwoven."

I would not say that represented the position at that time. I say the financial interests of the du Pont and General

Motors Companies were quite separate. Each stood on its own basis of facts. So far as the importance of having an executive who had the competence, I certainly subscribe to that.

[fol. 3079] By Mr. Harsha:

Q. I am directing your attention primarily to the last sentence I read, and I ask you if it is not true that the du Pont Company's practical control of General Motors [fol. 3080] stems from its ownership of seven and a half million shares or 38% of the G. M. common stock at that time?

A. Well, I don't know whether the 38%, even recognized at that time, is an important percentage, or would necessarily be practical control. I think it would depend upon the circumstances upon which the test was made.

Certainly, whatever position they had comes from the 38 per cent, or the seven and a half million shares, whatever it is, to which you referred.

Q. It is true though, isn't it, that immediately after purchasing Mr. Durant's stock, the du Pont Company requested Mr. Pierre du Pont to take the presidency of General Motors?

A. I wouldn't agree with that. As a matter of fact, nobody was more anxious to have him take the presidency than I was. I have already testified to that effect. Other people interested in the corporation felt the same way. The whole organization on which our success was dependent, felt it was essential that we have a man of Mr. Pierre du Pont's importance and standing, because it gave great confidence to the organization and the public at a rather critical time, so I would say that Mr. Pierre du Pont's coming into the presidency was the unanimous call of everybody interested in the business.

Q. Isn't it true that after Mr. du Pont took the presidency of General Motors in late 1920, that the Executive Committee of General Motors was almost immediately changed, reorganized?

A. Yes, that is true. It had to be, because, you see, the Executive Committee as it existed previous to Mr. du Pont's coming in as president, comprised the divisional executives.

and you are familiar with that, and I don't need to elaborate on that.

And Mr. du Pont didn't know, and I didn't know, as to [fol. 3081] the loyalty of those men who had been on the Executive Committee with respect to Mr. Durant. They were all proteges of Mr. Durant. They profited importantly by their association with Mr. Durant, and we felt that it was necessary, not knowing either the capacity from the standpoint of performance, or the loyalty, that it was necessary to make a complete change and start all over again.

Q. Pardon me. Go ahead.

A. Furthermore than that, there was a feeling on the part of Mr. du Pont, myself, and others, that it was unwise to have division managers on the Executive Committee, and if you refer to the record you will see that in the whole history of General Motors there have only been two cases where division managers had been on the Executive Committee, so for all of those reasons it was thought desirable to have a new setup.

I call your attention further to the fact that coincident with the organization, the reorganization of the Executive Committee, there was an Operations Committee organized, and the men who had served on the Executive Committee became members of the Operations Committee.

Furthermore than that, the record shows that very shortly after Mr. Pierre du Pont became president, there were a number of changes among the personnel that constituted the Executive Committee before Mr. Pierre du Pont became president. The record has been disclosed on that, and I needn't repeat it again.

Q. You referred to a question about the loyalty of some of the car division managers. I gather that the issue was whether they were loyal to Mr. Durant or the new management headed by Mr. Pierre du Pont?

A. No, I would say loyalty to General Motors Corporation. You will recall that Mr. Durant, shortly after he [fol. 3082 3083] retired from the presidency, started a competitive activity, Durant Motors, and one or two of the former members of the Executive Committee retired from General Motors and associated themselves with Mr. Durant.

Q. When did Mr. Durant start Durant Motors, do you recall?

A: Very shortly after he retired from General Motors. I couldn't—I am sure it was within a year.

Q: Within a year after?

A: I am quite certain. I might have to be corrected on that.

Q: Do you recall how shortly after Pierre du Pont assumed the presidency that the Executive Committee was reorganized?

A: Almost immediately, within thirty days.

Q: Do you recall the members of that Executive Committee as originally reorganized by Mr. du Pont?

A: Who were they?

Q: Yes.

A: Would I repeat them?

Q: Do you recall the names?

A: Yes, I do.

Q: Would you state them?

A: Pierre du Pont as Chairman, president of the corporation; Mr. J. A. Haskell was on the committee. He was a vice president of General Motors; Mr. Raskob, and he was Chairman of the Finance Committee, and myself.

The Committee at that time was limited to four.

Q: And all of those men that you have named, other than yourself, had been associated previously with the du Pont Company?

A: That is correct.

Q: Now, during the time that you have been with General Motors, Mr. Sloan, isn't it true that the du Pont Company has been the largest single stockholder?

A: That is correct.

[fol. 3084] Q: I show you Government Exhibit No. 1307. This is an exhibit, Mr. Sloan, which shows the percentage that the du Pont stock, voted at the annual General Motors stockholders' meeting, bears to the total stock that was voted at such meetings. You will note that the chart begins with the year 1928 and continues down to 1949, the date of the filing of this Complaint.

In the last column on the right hand side the percentages which the du Pont voted stock bore to the total shares voted at the annual meetings is set forth.

You will note, for example, that the top figure 1928 shows that the du Pont stock amounted to 52.3 percent, and

[fol. 3085] that for the next four years, down through 1932, it was over 51 percent. Then dropping down to 1936, it was again 51.3 percent, and for the years following that you will note the percentage ranges from 46 down to 29 percent.

Addressing your attention to those first five years listed there, from 1928 to 1932, where you note the percentages run from 52 to 51 percent, wasn't that a block sufficiently large to control the stockholders' meetings?

A. I don't think I can answer that question because the du Ponts voted their number of shares, whatever it was, in favor of the management. I don't think you can tell what would happen if, we will say, there was a conflict.

Take the year, for instance, 1932. You see there were seventeen million shares which didn't appear in the meeting. Now, if there had been a conflict for directors, there would be a very much larger representation than twenty-six million shares.

I don't think anybody could tell how that larger representation would vote. I think it would largely depend upon the issue that caused the conflict.

I believe that in those years, and all the other years, that the stockholders would be guided by the records of General Motors Corporation, both with respect to its advancement of its position, its earnings, dividends, and so forth.

You go down, for instance, to the year 1947. There were fourteen million shares that didn't appear in the meeting. Du Pont's interest was ten million shares out of forty-four million. In other words, I think we are dealing with theoretical conditions concerning which nobody knows.

Q. Isn't it true that in many large corporations today, and I am speaking not only of General Motors, that you [fol. 3086] have this common phenomena that all the outstanding stock is not voted at the annual meeting?

A. I didn't intend to infer that the outstanding stock would all be voted. My point was that in the case of a conflict for directors, a much larger number of shares of the outstanding stock other than du Pont would appear at the meeting, and that would upset the whole thing.

This is merely an arithmetical deduction of certain facts, which I think are more or less unrelated to the subject of control, as I understand you are inquiring about.

Q. Now, assuming that there was no conflict as to the

management slate of directors—as a matter of fact, you have never had a rebel slate of directors proposed, have you?

A. There has always been complete harmony. As a matter of fact our directors down through the years have been elected by a vote of the stockholders equivalent to about 99-plus.

Q. And the du Pont Company stock has always been voted in favor of the management directors, has it not?

A. Correct.

Q. And at least for these early meetings, from 1928 to 1932, and also in 1936, where apparently you have a large number of stockholders who are not voting, laying those aside, it is true that the du Pont stock alone was sufficient to elect the management slate of directors, was it not?

A. No, I don't think so. I don't think that if in any of those years there had been a conflict—I don't think I can testify to the fact that the large holding of du Pont would necessarily have elected a competitive board of directors.

I think you have got to know what the issue is, what the position of the corporation was, the attitude of the stock-[fol. 3087-3092] holders, how liberally they have been treated, the confidence they had in the management, and all of those things very definitely enter into it according to my best judgment.

Q. I want to make one thing clear so we don't misunderstand the import of this chart. This is not hypothetical in the sense it does show precisely how many shares were voted at each meeting?

A. I am sorry, I understand that fully. This is a factual statement.

Q. I believe you also stated that as a fact there had never been a rebel slate or conflict on choice for the management slate of directors over these years, is that right?

A. That is correct.

Q. So that there has been no conflict, and all I am asking you now is that in the absence of conflict, the du Pont block of stock in those years was sufficient, being over 51 per cent, to elect the management slate of directors?

A. I don't agree on that. It was over 51 per cent of the stock represented at the meeting, but it was not 51 per cent

of all the stock. In case of a conflict you immediately—the interest you arouse and all that, and the issues that are put before the stockholders, would mean that a much larger percentage of the stockholders would come into the meeting, and that would dilute in a way the du Pont interest.

So I can't say just what would happen. It would depend, as I say, upon a lot of circumstances that I can't evaluate.

[fol. 3093] Q. Mr. Sloan, I show you Defendant's Trial Exhibit, General Motors No. 10. I believe we had some [fol. 3094] testimony regarding that. I would like to call your attention to the first page under the heading, in the left-hand column, "Management," directors, so-called.

And there we have a list with Mr. Pratt. That was Mr. John L. Pratt, is that right?

A. John L. Pratt.

Q. He had previously been with the du Pont Company in an executive position, had he not?

A. Many years before that. He came to General Motors in about 1919 or 1920.

Q. Then you will note the name Brown. Is that Mr. Donaldson Brown?

A. That is correct.

Q. Whom we have already discussed as being a director of both companies, isn't that correct?

A. Correct.

Q. Now, I direct your attention to this entire list of management directors on the first page.

Isn't it true all of those directors were on the Board of General Motors with the consent and approval of the du Pont representative?

A. Well, you are going back to before my presidency when I had practically nothing to do with it. I cannot answer that question about that time.

Q. How would you answer the question, Mr. Sloan, with regard to the management directors listed on the second page, in December, 1942?

A. I would answer the question in this way: I testified on direct that the Board of Directors—the changes in the Board of Directors, were on my nomination, as president and subsequently as chairman.

After considering the wishes of a representative group of the Board of Directors as to whether they would be ac-

ceptable as members of the Board from all points of view.

That having been accomplished, then I recommend them to the Board. Changes in the Board of Directors, according to our present practice, are made by the Board itself.

Then at the following stockholders meeting, the list is pre- [fol. 3095] sented to the stockholders who act on it. I would say in answer to your question that no director could be put on the Board of Directors without having the unanimous approval of the present Board of Directors, particularly the approval of those members of the Board who are serving in the management.

It must be the unanimous approval that a certain individual is desirable. That is the practice we have followed, and in all cases the recommendations that I made, after the study that I made, it was unanimously approved by the Board, including of course, the members of the Board that were there in representation of the du Pont interests.

Q. Was it common, Mr. Sloan, for you to have, shall we say, any dispute or argument with other members of the Board who were on the management of General Motors regarding the selection of a new director?

A. No, we did not have any argument or dispute, but when the names came up, they were discussed thoroughly, and sometimes questions would come up to say the individual was too old, or did not have business experience.

Q. I am asking now only of your management directors.

A. Oh, I am sorry.

Q. Yes. Management directors.

A. I am sorry. I didn't get your question.

No, there was no dispute at all. The management directors are elected by the Board on my recommendation without discussion with anybody else, because they have to be on the board to discharge their corporate duties.

So, in answer to your question, as I now understand it, no, there was no argument at all.

Q. If the selection of other directors were made, would you discuss placing a man from the management on the [fol. 3096] Board of G. M.? That would be through the group which have been listed here as du Pont representatives, or others, is that right?

A. That is correct.

Q. Directing, for example, your attention to the second

page, 1942, the one we have been discussing, at that time you only had three other directors, so-called, under that heading?

A. That is correct.

Q. One of them I assume wasn't active at all, Mr. Harry McGowan?

A. That is right.

Q. The other two, I gather, were active, Mr. Whitney, from J. P. Morgan, is that right?

A. Correct.

Q. And Mr. Bishop?

A. I may say Mr. Bishop was not active. He was president of the First National Bank. He was not active in the sense I take your question.

Q. Now, when a management director leaves the employ of General Motors, he is usually dropped from the Board, isn't he?

A. No. A management director leaving or retiring continues on the Board. As a matter of fact, we just passed a rule January 1st, 1953, that they shall retire, but up to now they have continued. I am looking at page 2 here. There is a very considerable number of those who are out of management, and continued to serve on the Board of Directors.

Q. They are retired executives, is that correct?

A. They are retired executives, that is correct.

Q. But if a man has an executive position in General Motors, and then leaves General Motors, and he doesn't retire in the sense of going on pension, but assume, for example that he goes to another company; he would then go off [fol. 3097] the Board, wouldn't he?

A. Well, it would depend upon the circumstances. You asked me an academic question. That never happened, and I just tell you what would—I can't think of any. Maybe there are cases of that kind. They don't occur to me at the moment.

Q. Well, for example, let me show you this. This is called du Pont Exhibit No. 56. You will note that is an exhibit entitled "Members of GM Board and Governing Committees" from 1917 to 1952, and I would like to direct your attention to page 2.

A. Wait a minute, now, until I get it.

Yes, I have that.

Q. Now, if you will note the second name listed is Mr. W. P. Chrysler, and you will note that he remained a director through the year 1919, and then in 1920 there is a blank, and you will note the date. He retired apparently 3-25-20. Doesn't that coincide with the date he resigned?

A. Well, of course, he went into competitive business, and that was before my time, so I didn't associate that with the change. There might have been other changes, but—

Q. Well, you will note if you look at the column headed "1920"—do you have it, on page 2? Do you see that year 1920?

A. Yes, I see it.

Q. If you will drop down that column you will note E. Verlinden. He left the Board of GM at the time that he retired as executive officer, didn't he?

A. Yes.

Q. And the next name, Mr. F. W. Warner?

A. Yes.

Q. That is similar, isn't that correct?

A. That is correct.

Q. And then in the next bunch of names you will note F. W. Hohensee.

A. He retired. He was one of the executives that went with Mr. Durant when Mr. Durant organized Durant Motors.

[fol. 3098] Q. And the next to last name in that column, K. W. Zimmerscheid, he left in 1923?

A. Right. His health broke down. He had to leave. I think when you asked the question about changes, I think I answered wrong. I didn't think of the early changes. I was thinking more of recent years.

Q. I see. Isn't it true that during the period of time that you have been with General Motors, Mr. Sloan, that the du Pont Company could at any annual stockholders' meeting change the entire set of management directors if there was a serious enough conflict within the organization?

A. No, I don't think they could. I am of the opinion that with the record of General Motors—I will not elaborate on that—that if it came to an issue, the stockholders would support the management.

That is only an opinion, but of course it would depend a great deal on the then existing circumstances as to the status of the business. If the management let the business

down, and the record was unsatisfactory, that might change it. I don't think you can deal with a case of that kind. It is too hypothetical, because you don't know the circumstances under which the issue would arise.

Q. Let me show you a letter, Mr. Sloan, that was written by Pierre S. du Pont in 1947. This is Government's Exhibit No. 1057 in this case, and it is addressed to Mr. Lamont du Pont Copeland. It regards the affairs of the United States Rubber Corporation, but I would like to call your attention to the second paragraph in which Mr. du Pont states:

"I do not fear the result of the management group [fol. 3099] being in the majority. If such fear is real, we should change the management."

Didn't the du Pont Company have the same power to do that in General Motors?

A. No, I don't think they had. I have already testified to that effect. I think the record of the business, as evaluated by the stockholders, would determine whether the management's place was approved or an impending slate offered by the du Pont.

Q. I want to show you a government exhibit, Government's Exhibit No. 190, Mr. Sloan. If you direct your attention to the part that is penciled there, that is the part I wanted to read.

That is a letter written by Lamont du Pont, Chairman of the Board, to yourself in 1930, April 22nd, and it states in the third paragraph that:

"I like very much your idea of doing away with the Operations Committee and electing to the Executive Committee the present members of the Operations Committee, who are not now members of both. This means Bradley, Grant, Hunt and Wilson would have to be elected to the Executive Committee, and presumably would have to be elected directors. They are all Vice-Presidents at present. I think this would be a good thing to do, the only objection being to adding numbers to the already large Board. This objection is trivial."

Now, in connection with that statement about this objection that there be more on the management directors,

that that objection is trivial, would you say that the number of management directors was unimportant to the du [fol. 3100] Ponts, that were on the GM Board?

A. I don't see why it should be otherwise.

Q. Did Mr. Lamot du Pont or Mr. Pierre du Pont or Mr. Irence du Pont at any time ever express any concern to you, Mr. Sloan, about the number of management directors on GM's Board?

A. I never heard of such a thing. I don't think they were interested or cared one way or the other about it.

Q. On direct examination you were shown Government's Exhibit No. 203, and over on the last page of that you will note in the last paragraph the sentence beginning "In the last paragraph of your letter you bring up the question of the so-called 'du Pont influence,' " and you were asked by Mr. Hurd, I believe, as to what you meant by the term, and your reply as set out in the transcript was that you felt when important significant problems of policy arose, "If we had in contact with those problems people who had a stockholder interest and they felt it was all right, I would stick to my conviction that it was the right thing to do."

Now, in connection with that policy, Mr. Sloan, wasn't one of your purposes to forestall any conflict or clash between the GM management and the du Pont representatives?

A. No, not that I know of.

Q. Weren't you trying to prevent a condition arising whereby the du Ponts might attempt to oust the management of GM?

A. No, if I understand your question, my previous testimony had reference to the fact that I felt that it would strengthen the hands of the management to have, when important questions of policy arose, to have the support and understanding of outstanding business people, [fol. 3101-3103] particularly in the case of Mr. Lamot du Pont who was—the fact that they were stockholders would help us that much.

My responsibility as chief executive of General Motors was very great, and I was anxious to have everybody understand what we were doing and how we were doing it, and get their support as to what policies were adopted. It was simply to strengthen the management, the administration of the business.

[fol. 3104] How is the number of the so-called du Pont representatives decided, do you know?

A. I think it is more accidental than otherwise. There is no rule or policy or understanding as to whether they should have any particular number, so far as my knowledge goes, and I think if there was any such understanding, I would have known about it.

Q. Is it correct to say that the du Ponts themselves determined the number of representatives they wanted on the Board of General Motors?

A. The question has never arisen. I don't know—there is no policy. It just kind of develops that way through a natural evolution of circumstances.

Q. Is it correct, then, to say that the du Pont people make the recommendations as to whom they want on the Board as being their "representatives" and those nominations are then accepted without question?

A. That is correct.

Q. Have you ever had the situation where the du Ponts wanted to have, say, ten or fifteen members as du Pont representatives on the Board of GM?

A. Such a situation has never arisen. There has never been any discussion as to that point whatsoever. As I testified before, I think it just sort of happened that way.

Q. Isn't this true, as you said, that in 1923 the du Ponts had 38 percent of the GM stock, and I believe today the figure is around 23 percent of the outstanding GM stock?

A. That developed because, you see, we had at that time the General Motors Securities Company, and that was liquidated in 1938, and that changed the picture.

Q. But the number of the du Pont representatives on the Board of GM has not been determined by the percentage of the General Motors stock which they own?

[fol. 3105-3109] A. Nothing of that kind at all. As I have said before, and I am quite sure I am right, it just happened that way.

[fol. 3110] Q. I say, through the power of making these appointments to these policy making committees of General Motors, the president of General Motors can influence heavily the operational policy of General Motors.

A. Well, the answer is yes, because he is the leader, but

on the other hand, it depends on how he does it. In my case, I never made any appointments or adopted any important policies without all of the important factors in the management group being consulted and approving of it.

So my recommendations along the line that you inquire were the composite judgment of the management group as a whole rather than any particular influence I could exert as president of the corporation.

Q. And didn't you customarily consult with the du Pont representatives concerning these appointments to the Policy Making Committees of General Motors?

A. I consulted with all the directors, Management and otherwise, everybody that I thought could contribute to a better result.

I discussed such matters with the outside directors, such as Mr. Whitney, who has contributed importantly to our progress.

Again, I say that nothing was done except it was largely the unanimous opinion of the group as a whole, management and otherwise, that it was the right thing to do. Otherwise it wasn't done.

Q. Yes. If the du Pont representatives disapproved of a suggestion that a particular person in management be placed on a policy making committee, that appointment would usually not be made, would it?

A. Approved an appointment in management?

Q. Yes.

[fol. 3111] A. It depends on what the circumstances were. They might question something. I don't remember that they have particularly, but it would be argued out, and if they had good reason, why, it would not be done, just the same as if anybody else had a good reason.

We judged it by the merit of the proposition rather than the individual by whom the question was put.

Q. I would like to show you Government's Exhibit No. 205, which is a letter addressed to Mr. Lamont du Pont, written by yourself, in 1943. I direct your attention to the second paragraph, in which you state:

"Do you think it would be helpful to increase the membership of the Policy Committee by one, and include Mr. Kettering in the group?"

Then you will note that opposite that there is a handwritten note "No," and at the top there is the notation, which apparently is "Answered verbally no 6/2."

Q I presume that is in the handwriting of the addressee, Lammot du Pont.

Mr. Kettering didn't go on the Policy Committee, did he?

A. No, because others thought the same as Mr. du Pont. As a matter of fact, when I considered it myself, I rather agreed with the point Mr. Lammot made.

Mr. Kettering was a large stockholder, and of course is a very eminent citizen, but we all agreed that if he came on the committee he would be telling us about all the wonderful things that were in the future, and we wouldn't have time to attend to the business of the corporation. That was one of the reasons.

Q. Yes. I note that the first paragraph of the letter indicates you are sending copies of this letter to Mr. Carpenter and also Mr. Whitney.

A. Yes.

Q. Whom I think we previously identified in the testimony [fol. 3112-3113] money?

A. That is in accordance with my previous testimony that I tried to get the consensus of opinion of all those that would contribute to the final result.

Q. But at the time you wrote this letter, Mr. Sloan, isn't it fair to say that you had thought that Mr. Kettering's interests were now broader than merely technical matters, and that you thought it might be a good idea to have him on the committee?

A. Yes, but after consulting with the whole group, they differed with me, so of course I didn't go any further with it because, as I have already testified, in all these things you can't have a team unless everybody has confidence in everybody else. It is very necessary to work together to a common purpose, and to have everybody have complete confidence in all their associates.

Q. Would you say that this was a recommendation of yours which was vetoed by Mr. Whitney, Mr. Carpenter and Mr. Lammot du Pont?

A. I don't remember what Mr. Whitney's and Mr. Carpenter's point of view was, but I remember discussing it

with the management, and after complete consideration it was decided it was not a wise thing to do.

[fol. 3114] Q. Let me show you a document which has been marked Government's Exhibit No. 1312 which is a syndicate agreement dated June 23, 1920, and if you will turn to the last page—

A. Yes?

Q. The fifth name listed there; is that your signature?

A. That is correct.

Q. And the amount of your participation in the syndicate is listed at \$500,000. Is that correct?

A. That appears to be correct.

May I say that this syndicate is the only one that I can— is the one I referred to a minute ago. You will note this is the underwriting here, this 1,400,000 shares, and I think that that is related to the 3,200,000 shares which were sold at that time to bring extra capital into the business. I referred to that a while ago.

[fol. 3115] That is the only syndicate that I know of that I was ever connected with, and I don't think this has any relation to Mr. Durant's stock. I am confused on that.

Q. Yes. Well, now, isn't this syndicate, the agreement of which you have in your hand—wasn't this the predecessor to the July, 1918, syndicate?

A. The one you asked me about?

Q. Yes.

A. I don't know.

Q. You will note that the participants in the syndicate, the agreement of which you hold in your hand, lists your name among others with the du Pont Company and also Mr. Durant, I believe is the fourth name listed there.

A. That's right.

Q. Do you recall the circumstances under which this syndicate was organized? Was there a meeting of these people?

A. Well, generally speaking, an underwriting of that syndicate started, and then somebody takes the leadership. I think in this case it was J. P. Morgan & Company that had the leadership, and then they get people to subscribe to it, and the way I subscribed here or had a participation in the amount of \$500,000, this doesn't mean that we buy that amount of stock.

< It is an underwriting, so that if the stock in question is not taken up by the stockholders, then the underwriters would be responsible to have to take up the stock that wasn't taken. That is my understanding of it.

Q. Yes.

A. I don't think this has any relation to the question you asked me first about Mr. Durant's stock.

Q. No, I did not intend it to.

A. They are two separate things.

Q. That is correct. I was merely trying to inquire as to the relationship between the syndicate mentioned in this document here of July 16th, and the syndicate agree [fol. 3116] ment of June 23rd.

A. You recall asking me some questions about the interest of the English people. The English people took up a considerable amount of this stock, too. That accounts for the difference between the one million, four, and the three million, two, to which I have testified before.

Q. Do you recall who approached you to become a member of this syndicate?

A. I don't remember it at all, frankly, and I don't remember how the syndicate came out, whether I made money or lost money. I don't think I could have lost very much, or it would have made an impression on me.

Q. I believe you testified that sometime during the summer, perhaps August of 1920, you took a trip to Europe, I believe you mentioned.

While you were in Europe, were you kept advised by the syndicate manager of any trading in this stock, pursuant to this agreement?

A. No, I don't—I was not advised. I was on a vacation trip.

Q. Were you ever informed by anyone in 1920 or 1921 that a very large block of stock held by a syndicate, or rather in July, this syndicate of 1920, had been sold on a declining market?

A. No, I don't remember anything about the transaction at all. I have a remembrance of the syndicate, but I don't remember what happened to it at all, and naturally the management of this was apparently in the hands of J. P. Morgan & Company. To what extent the participants were advised from time to time, I don't know. The whole thing has gone out of my mind, to tell you the truth.

Q. Now, I noticed that on your direct testimony you stated that after you returned from Europe, from this trip [fol. 3117] in August, 1920, upon your return to New York and your going into the offices of General Motors, you found that conditions were moving ahead very rapidly, and that as a result of that you decided to continue on with General Motors to see what might happen.

Did you have any intimation at that time, when you changed your mind about resigning from General Motors or selling your stock, that Mr. Durant was on his way out as president of General Motors?

A. I didn't know anything about it. As I said before, I knew Mr. Durant was operating in the market. I didn't know to what extent he was operating successfully or otherwise. I have already testified that I knew nothing about his personal affairs.

When I came back from Europe the most unusual thing was that Mr. Durant was on a vacation. He had never taken one before, and the impression I had that things were moving along, and I thought that I would wait and see what happened, exactly as I testified.

I had a tentative deal made to enter the banking firm in New York, Lee Higginson & Company. The time was not definite, so I thought I would wait and see what happened, and at the end of November Mr. Durant retired. I had no knowledge at all—I thought, as a matter of fact, that he was in control of a large amount of stock, and I knew no reason why he shouldn't continue in the management.

Q. Can you tell us what were the facts upon which you based your testimony that conditions were moving ahead very rapidly?

A. Well, it was only an impression I had. I sort of felt it in the atmosphere. There was nothing particularly definite about it. I had no concrete knowledge of the facts. It was just an impression I had.

[fol. 3118] Q. Did you have a discussion at that time with anyone concerning the conditions of General Motors?

A. No, not particularly.

Q. Immediately upon your return from Europe—

A. At that time I thought the corporation had very heavy inventories, but that was a detail. They could be liquidated under proper management. I was not concerned with the immediate position of General Motors.

I was concerned, from my own point of view, with the long term position, because I didn't feel that the corporation was being managed in a way that was necessary to have it take a place in the industry and develop in line with the development of the industry itself.

Q. Did you have any discussion at all, upon your return from Europe, with either Mr. Raskob or Mr. Pierre du Pont or Mr. Pratt or Mr. Donaldson Brown concerning the position of Mr. Durant in the company?

A. No, I don't recall any discussion with anybody. I kept my counsel to myself.

Q. Did you have any discussion with either of these gentlemen concerning your own position?

A. Not at all. I never did. I don't think they knew what I had in mind.

Q. Then you testified concerning a meeting which you attended, I believe shortly after Mr. Durant resigned as president of GM, at which Mr. Pierre du Pont and Mr. Raskob were present, together with certain other unidentified persons, and apparently the subject-matter was the presidency of General Motors, and you stated that you urged very strongly that Mr. Pierre du Pont assume the presidency of General Motors, and that either then or later Mr. du Pont indicated with some reluctance that he would [fol. 3119] take it, so long as it was on a definitely temporary basis, and that it was understood that that was the basis.

Was there anything said at that meeting as to what his plans were in respect to how long he would remain with General Motors?

A. There was nothing said at all except that he made it very clear that he had retired. He didn't wish to get in active business again, and that if he took the presidency it would be very definitely a temporary thing in character until he could find somebody he felt was qualified to carry the responsibility.

Q. Do you recall whether there were any other persons at that meeting who had been either executives or directors of the du Pont Company?

A. I tried my best to put my mind back thirty years and answer that question, but I have not been able to clarify in my mind who the people were that were present. I am sure

there were other people, but I cannot recall who they were. I know Mr. Pierre du Pont was present, and I think Mr. Raskob was present, but my memory stops right there.

Q. Was anything said at that meeting, if you recall, regarding your position with General Motors, or your future with General Motors?

A. Not at all; not at all. Nothing had ever been said to me, particularly, about my future in General Motors any way.

Q. Was any suggestion made at that meeting as to who might be a possible successor of Mr. Pierre du Pont after he terminated his temporary office?

A. Not at all. He didn't go that far. I don't think there was any basis for any discussion of that kind.

Q. Now, I think we have already covered in a general way that your testimony in which you stated that one of [fol. 3120] the most important things that occurred immediately after Mr. Pierre du Pont's becoming president of General Motors, was this reorganization of the Executive Committee which was then composed of Mr. Pierre du Pont, Mr. Raskob, Mr. Haskell and yourself, and the former Car Division managers were then removed from that committee.

A. I want to add there, if I may, and that is that the Car Division managers were still in the counsel of the corporation, but they acted through an additional committee that was created, or the Operations Committee, and that has been the practice of the corporation down through the years.

Q. And that committee is inferior in power, isn't it?

A. That is correct.

Q. To the Executive Committee?

A. That is correct, it is.

Q. Do you know why so many persons were placed on the Executive Committee who had connections with the du Pont Company at that time?

A. No, I don't.

Q. Then you testified that in 1921 the Car Division managers of the Cadillac Division and the Oakland Division and the Olds Division were removed under various circumstances which we have already discussed, I believe, in this case. They were removed by Mr. Pierre du Pont, and that you then recommended to Mr. du Pont their successors who were, I believe, Mr. Hardy, to be the Division Manager

of Olds, Mr. Wright to head up the Cadillac Division, and Mr. Hannum to head up Oakland Division.

Now, in connection with that, I would like to show you an exhibit, Government's Exhibit No. 421, which is a letter written by P. S. du Pont, President of General Motors, addressed to Lammot du Pont, Vice President of the [fol. 3121] du Pont Company, dated August 23rd, 1921.

A. Have I the right letter?

Q. I am afraid you don't.

Just let me read the part to you, and I will show it to you, if I may.

A. All right.

Q. This is the document in which Mr. du Pont states in the second paragraph;

"With the change in management at Cadillac, Oakland and Olds, I believe that you should be able to sell substantially all of the paint, varnish and fabrikoid products needed; especially is this true of Cadillac."

I show you the exhibit, and I would like to ask you this question, after you have finished looking at it.

A. I have read it. Thank you.

Q. I would like to ask you whether you discussed with Mr. Pierre du Pont at the time this letter was written, or shortly before it, the attitude of these prospective heads of the three divisions towards the du Pont Company, and their policy toward purchasing the products?

A. I never had any discussion at all. That sort of thing never came into these considerations.

Q. You did have a discussion with Mr. du Pont, though, concerning these three new car division managers?

A. I recommended these appointments to Mr. du Pont, and these appointments were men already in the organization who had been in the organization for many years.

Q. If you know, Mr. Sloan, what caused Mr. du Pont to say that with the changes in these car divisions, the [fols. 3122-3123] du Pont Company should be able to sell them their entire requirements?

A. I have no idea what caused him to express that point of view, and I am frank to say that I did not have that point of view at that time in substance or in fact.

ADJOURNMENT

[fol. 3124] ALFRED P. SLOAN, JR., called as a witness on behalf of the defendants, having been previously sworn, resumed the stand and testified further as follows:

Cross examination (Continued)

By Mr. Harsha:

Q. Mr. Sloan, I should like to call your attention again to a document that we discussed very briefly, to another portion of it, this morning, and that is Government's Exhibit No. 207, and I should like to direct your attention to the second page, the paragraph which is marked "Third." Perhaps by way of introduction I should indicate that, in this letter which you wrote to Mr. Carpenter in 1943, you were discussing the organization of the Board of Directors of General Motors, and you were saying that you are going to use the following formula for determining recommendations to that Board, and these numbered paragraphs, I assume, are points in the formula which you are suggesting to Mr. Carpenter.

Number 3 reads as follows:

"I think we must be careful to exclude those who represent interests that have relationship with General Motors, particularly in the buying and selling area."

Mr. Sloan, why did you recommend that suppliers of General Motors be excluded from the Directorship?

A. Well, this formula, as you called it, must be considered with respect to a lot of other discussions that have centered around it. It was not a complete formula in itself. My feeling is, that where there is a stockholder relation- [fol. 3125] ship, that the question of buying and selling areas doesn't enter into it. I feel that the ownership of property justifies a representation in the management of that property.

For instance, I am a large stockholder in General Motors, and I feel that, unless I should be persona non grata to the management, I am entitled to a position on the Board of Directors due to my large stock holdings.

Q. Well, now, absent the stock holdings, was it in your

mind when you wrote this paragraph that a director who is also a supplier to GM might be open to the accusation that he was influencing the purchasing policies of General Motors with respect to that supplying?

A. Well, I think that is no qualification for a director, and that putting the man on the Board, and that director in turn was a supplier, and there was no other qualification, I would think it would be just as well to leave him off, because there would be no justification for putting him on.

But I feel again, that a substantial stockholder relationship with the corporation justifies a position on the Board of Directors.

I feel also that an individual of high standing in the community who contributes importantly to the welfare of the business, I think should be on the Board, and I would be inclined to waive other limitations because of these contributions to the progress of the business.

Q. Just one final question: Let me see if I understand now the reasoning employed in this letter. You did have, I gather—you saw a danger, if you had a director who was also a supplier?

A. Providing he had no other qualification. In other words, I wouldn't see any reason why he should be on the Board, but if he is an important stockholder, if he is a distinguished citizen, if he is an outstanding businessman, [fol. 3126] I would accept him because in my management, in the management of General Motors, I appreciate that we must have competence on all counts, or we cannot have a successful business. Therefore I rank that higher than anything else.

Q. Now, isn't it true, though, Mr. Sloan, that if the director is also a very large stockholder and a supplier, that the danger of his influencing the purchasing policies of General Motors is greater?

A. I don't think there is any danger there at all. I think any director who is a large supplier, granted he is a large stockholder, if he is an intelligent individual, knows perfectly well, if he goes to use his position as a director to advance his position as a supplier, that is just the way he is not going to get any business at all.

Q. Mr. Sloan, you were shown on your direct examination General Motors Exhibit No. 15, which is a schedule of

the meetings of the Board of Directors of the du Pont Company for the years 1923 to 1948, and on this I gather that the thrust of this chart was to show that it was only on the meetings which bore an asterisk that you attended the meetings of the Board of Directors of du Pont.

Now, isn't it true that quite apart from these formal Board of Director meetings that you had many informal conferences with the du Pont representatives in Wilmington and in New York and other places?

A. As to the du Pont business?

Q. No, as to the General Motors business.

A. Well, the du Pont representatives on the Board of Directors, I was in contact with them more or less, not particularly in Wilmington, but more particularly in New York where we met, probably some in Detroit. That was their responsibility to General Motors, and my responsibility to [fol. 3127-3131] General Motors too, to have conferences wherever they involved the position of the business.

Q. And those conferences related only to General Motors business?

A. Only to General Motors business. I never have aided directly or indirectly, in any way of any of the problems involving the du Pont business. I know nothing about them whatsoever.

Q. I should like to show you again, Mr. Sloan, Government's Exhibit No. 207, which you have just testified about. You will notice the first paragraph of that states, "I have your letter of September 22, referring to the above matter, and also to our discussion at your finance meeting in Wilmington last Monday."

That is the Finance Committee of the du Pont Company, isn't it?

A. Correct.

Q. Did you attend that Finance Committee meeting?

A. No, I didn't. I have never attended a Finance Committee meeting of du Pont. I have never attended an Executive Committee meeting. I have never participated in any of the affairs of their business. This, I think, refers to the fact that once I went into the Finance Committee after the committee had adjourned.

[fol. 3132] Q. It was your opinion that General Motors should not undertake the commercial manufacture?

A. That was the position I took on the basis of lack of competence. Further, more than that, the manufacture of this particular material involved certain questions of danger in manufacture, somewhat analogous to tetraethyl lead, perhaps not so much, and I thought it was something we should not engage in. I told Mr. Pratt that.

Q. I would like to show you then, further carrying along this line of discussion, Government's Exhibit No. 840, which is a letter dated March 28, 1930, which was written approximately two weeks after the preceding document we have just examined. It is a letter by Mr. E. G. Robinson, General Manager of the Dyestuffs Department of du Pont, addressed to Mr. Pratt of General Motors.

It simply states that they are going to discuss fully the [fols. 3133-3138] question of the methods of manufacture of this product, and he states that:

"We are arranging to have these men there at the earliest possible moment, since we understand this is your desire and we entirely agree with you that the possibilities of this proposition are such that we should proceed to cooperate with the least possible delay."

Prior to the writing of this letter, Mr. Sloan, did you communicate with someone in the du Pont Company on this Freon?

A. No, I had no communications with anybody at any time with respect to this proposition except Mr. Pratt, and having made my decision that General Motors didn't have the competence, in my judgment, to enter into the chemical manufacture, I asked Mr. Pratt to investigate the matter and develop a program which, in his judgment, seemed to be constructive within the rules that I laid down.

Q. Did he report back to you as to his plan?

A. He did in due course. He reported the plan that contemplated the organization of the company and the financial setup related thereto.

Q. Did Mr. Pratt inform you that he had undertaken negotiations with the du Pont Company for the Freon chemical?

A. I don't recall that he did, but there was nothing that required him to go to the du Pont Company. My position

was General Motors was not competent to enter into the manufacture of chemicals.

Q. You didn't give him any recommendation as to who should undertake it?

A. No, that was an open field so far as he was concerned from my point of view.

[fols. 3139-3140] Q. I call your attention also to the eighth paragraph on page 3. Do you see the eighth paragraph where it states:

"Du Pont agrees with respect only to the production of said products' specified in Paragraph First, that it will be responsible for the management of the New Company."

Then on the second page, you will note paragraph 3.

A. Wait a minute. What paragraph?

Q. Paragraph 3:

"Upon the organization of the New Company, Du Pont shall subscribe for fifty-one percent (51%) of said total authorized capital stock and General shall subscribe for forty-nine percent (49%) thereof."

Isn't it true, that after Kinetic was set up, that the du Pont Company undertook to provide management for Kinetic?

A. I think that to a large extent is true, because they had the competence, and General Motors did not have the competence. That is the reason why we did not go into it in the first place, and they had people who were interested in the matter. According to my best recollection, the management was set up largely for that purpose.

[fol. 3141] Q. Do you know, Mr. Sloan, who in General Motors wanted to build up an independent chemical manufacturing activity?

A. I do not. I have no idea who that could be.

Q. Well, didn't Mr. Biechler, your general manager of Frigidaire, in that first communication that I showed you, indicate a desire to have the manufacture of fluorine in General Motors?

A. Maybe he did, but that wouldn't have anything to do with the policy from the standpoint of the general policy of the corporation. I made the decision that we were not

competent in that, and that would have been governing. Whatever Mr. Biechler wanted to do, I don't know. I am inclined to think in the record there was some letter of that kind.

Q. Then turning to page 5, the first full paragraph states:

"To summarize, as far as I am concerned I hope to see General Motors Corporation utilize to the fullest extent the chemical experience of the du Pont Company in manufacturing any chemical compounds that General Motors laboratories may discover, where there is a possibility of commercialization."

Did Mr. Pratt's statement typify the attitude of the top executives of General Motors at that time?

[fols. 3142-3143] A. Well, I don't think that I could say that it did, because I think it was a personal opinion of his. So far as I know, the question never came up as a matter of policy before the Executive Committee, which would have been the governing group in that connection. I have already testified in various ways in my examination here, that I don't think that any general rule could be laid down for any of these things. Each case must be determined on the basis of its individual merits.

Q. I note that you received a copy of this letter, Mr. Sloan. Did you have any discussion concerning this part of the letter with Mr. Pratt?

A. I don't recall that I did, Mr. Harsha.

Q. Do you recall receiving this letter?

A. I don't recall it, frankly.

[fols. 3144-3145] Q. Do you agree with this statements, Mr. Sloan, in the last paragraph where he states:

"Personally, I would rather depend upon the du Pont Company for our chemical developments than for us to start an independent development of our own."

Was that your attitude, too?

A. That gets back to what I said before. If it came to a decision between our making the chemical development and someone else making it, I will always rule against our making it because I don't think we have the competence.

I called attention in direct examination to the fact that

- we must not confuse what we did in research with the ability to manufacture from a production point of view. As a matter of fact, all these things that have come up here for discussion in the chemical line were the productivity of one research man in General Motors Research. Outside of that, I don't know anybody in General Motors, unless it was Mr. Kettering, that had any chemical background whatsoever, either in research or in manufacture.

[fol. 3146] Q. Did you receive an opinion from your Legal Department, Mr. Sloan, regarding the unenforceability of Article Seven of the Kinetic agreement?

A. I don't remember any opinion from our Legal Department, but we did have a recommendation from the Legal Department that that particular condition should be canceled, and subsequently it was canceled, if I remember correctly.

Q. It was not canceled before the filing of this Complaint in June, 1949, was it?

A. I don't know whether it was or not.

Q. Next I show you Government's Exhibit No. 575—

Mr. Hurd: If the Court please, for the enlightenment of the Court and counsel, I now say it was canceled a considerable number of years before the filing of the Complaint in this case.

By Mr. Harsha:

Q. This is a letter to the Executive Committee from the Chairman of the du Pont Company, signed by Mr. Lamont du Pont, and it is dated April 22, 1920.

I call your attention to the first paragraph:

"At a conference April 22d, attended by Messrs. J. J. Raskob, C. F. Kettering, Irene du Pont, Dr. Reese and other representatives of the Chemical Department, the question of the basis upon which the du Pont Chemical Department would undertake work for General Motors Corporation was discussed. As a result, Mr. Raskob made a suggestion which appears [fol. 3147] to be reasonable and which I recommend the Executive Committee approve, in principle, as follows:

"2. General Motors will be free to call upon du

Pont Chemical Department for any advice or work that General Motors desires du Pont to undertake. When so called upon, du Pont is obliged to undertake the work.

"3. It is understood that General Motors Corporation will establish, at such of their plants as seem to be proper, chemical laboratories to handle their routine problems, in view of which it is not intended that General Motors Corporation will request the du Pont Chemical Department to handle any routine work."

Then you will note on the next page that there is a discussion of dividing research projects—

A. What is that?

Q. A discussion on dividing research projects into group 1, and group 2. Do you see that?

A. Oh, yes.

Q. Then I would like to pass over to the next page, beginning: .

"In all cases in Group 2, General Motors shall pay du Pont the actual cost of the work, including overhead, but no profit. The actual cost and overhead to be determined in the usual way according to accounting methods employed by du Pont Company. In such cases du Pont and General Motors will each have a fifty percent right in any information, processes, inventions or patents resulting from the work."

Did you receive any report regarding this conference from Mr. Kettering?

[fol. 3148] A. I don't recall that I did, but this question of cooperative effort between General Motors Corporation and du Pont with respect to research came up at various times, beginning here, and continued for two or three years.

It was both unsound and undesirable. Personally, I never approved such an arrangement, and as a matter of fact, no such arrangement ever went into effect. It would be very undesirable for a corporation like General Motors to, you might say, turn its research work over to anyone else. Research must be confined within the organization involved.

I was very much against that, and as I said before, it was finally turned down two or three years later. There

is a good deal of record in connection with the various steps taken in the meantime, but nothing ever came out of it.

Q. Did you have any connection with those negotiations, Mr. Sloan?

A. I don't think I did. I think most of it was between du Pont and Mr. Kettering. Mr. Kettering would be the natural agency in General Motors to deal with research problems of that kind.

Q. I show you Government's Exhibit No. 598, which is a memorandum for file, prepared by Lamot du Pont, who was then, I believe, vice-president of the du Pont Company.

He states that:

"In conversation with Mr. P. S. du Pont he advised that it does not seem possible at this time to institute any plan for co-operation on chemical research work between General Motors Corporation, his feeling being that, as problems come up, special arrangements with reference to each should be made between the two Companies, rather than attempt now to make a general arrangement to cover prospective cases."

[fol. 3149] Did Mr. Pierre du Pont, who was then president of General Motors, inform you of this discussion and the decision which he had reached with his brother, Lamot du Pont?

A. I don't recall whether he did or not, but the fact is that the whole proposition was unsound. Mr. Kettering was against it. Everybody was against it. It couldn't be considered from the General Motors' point of view.

Q. You notice his language in the middle there, that "special arrangement with reference to each should be made between the two Companies"?

A. Well, it is very customary in conducting research activity to allocate certain special problems to people who have particular competence in those particular specific problems.

General Motors, you will recall, referred the early development of tetraethyl lead from the production standpoint to the Massachusetts Institute of Technology. That is quite customary, and there is nothing objectionable to doing that sort of thing, from an organizational point of view.

That is quite different from assigning all your research work to someone outside the organization involved. That is impossible, and could never have been approved by the General Motors' management.

Q. But isn't it true that on subsequent important developments in a chemical field that Mr. Midgley, and others in General Motors, conceded that the commercial production of those chemical developments were turned over in each case to the du Pont Company?

A. Well, I don't know what Mr. Midgley's point of view was, but you will recall, that after tetraethyl lead was discovered in December, 1921, shortly after, that Mr. Kettering took up with du Pont an examination of certain of the problems involved in the commercialization of tetraethyl lead.

Mr. Harsha: May it please the Court, yesterday in connection with questioning Mr. Sloan, I called to his attention and showed him the exhibit, the Syndicate Agreement of June 23rd, 1920, which was numbered Government's Exhibit No. 1312, and I omitted to offer it in evidence. I would like to do so at this time.

Mr. Hurd: No objection.

(Said document, so offered and received in evidence, was marked Government's Exhibit No. 1312.)

[fol. 3152] Q. Now, I show you Government's Exhibit No. 618, which I believe you discussed on your direct examination. This is the agreement between the du Pont Company and General Motors, dated October 6, 1922. This was the first tetraethyl lead contract, isn't that right?

A. That is correct. When you use the word "contract," I just want to emphasize it was somewhat more like a development project, but it took the form of an agreement, and I think you very properly called it a contract. That was the only agreement General Motors ever made with respect to the manufacture of tetraethyl lead.

Q. Now, this contract, I assume, in the normal corporate organization in General Motors that then existed, was submitted and discussed and approved by the Executive Committee and the Finance Committee of General Motors, is that correct?

A. I am trying to think whether our procedure required

the approval of the Finance Committee. I hardly think it did, because it was a purchase contract of certain materials at that time which did not involve any financial consideration [fol. 3153] except that was involved in payment for these materials. I am a little uncertain whether that would be considered as a matter for the Finance Committee or something that had to go before the Executive Committee. I would not think it had to go before the Finance Committee. I may have to be corrected on that. As I indicated in my answer, I am not too certain, but my belief is it did not require such approval.

Q. Weren't contracts that were signed by the president of the corporation usually discussed and approved first in the Executive Committee and Finance Committee meetings?

A. Not necessarily; depending upon what the nature of the contract is. I signed all kinds of papers as president of the corporation, which didn't go to either the Executive Committee or the Finance Committee.

Q. This was a rather important contract at that time, though, wasn't it, Mr. Sloan?

A. That wouldn't make any difference. It would depend upon the nature of it, not its importance.

Q. Next I should like to show you Government's Exhibit No. 622, which is a letter that you wrote to Mr. Irene du Pont, president of duPont Company on January 28th, 1924, in which you state, at the beginning:

"I have just had a talk with two or three of the high officials of the Standard Oil Company of New Jersey, covering our relations with them."

And then dropping down to the next page, the first paragraph states:

"With the above atmosphere, which is given you in order to intelligently reach the point I want to make, the Standard Oil people are urging very strongly [fol. 3154] a deal whereby they want to capitalize the present exclusive contract by exercising the right they have to license competitors covering the use of tetra ethyl lead, thereby getting a broader distribution which they claim will be to our interest and in return for that

they want the right to manufacture for our account tetra ethyl lead at a price competitive with the du Pont Company.

"I feel, and have held right along, that in view of the fact that we are in the development stage we should not in any way discuss with these people anything to do with the manufacture of tetra ethyl lead. I question whether it will be good business from our standpoint for them to manufacture tetra ethyl lead and at the same time have such a large slice of the distribution on same."

Now these are the reasons which you express, Mr. Sloan, to the president of the du Pont Company regarding your viewing with disfavor Standard Oil's undertaking the manufacture of tetraethyl lead.

Aren't those reasons really commercial reasons for declining to have Standard Oil manufacture tetraethyl lead?

A. Well, there are really, as I see it, two questions involved in the reference you have made to this particular letter.

In the first place, it is always desirable in a development stage of any product where conditions are very rapidly changing, and there is a lot of uncertainty, to confine the problem as much as you can, and that is what I referred to in the development stage, that I preferred to confine it to one source, because it simplified the arrangement. Most [fol. 3155] development problems of this kind follow that course. We start on a limited basis, and we move on, and finally when the thing gets established and the uncertainties are largely resolved, we go on to somewhat different procedure.

The second question arises here in the quotation you have made, about the commercialization with relation to the manufacture. At that time, Standard Oil of New Jersey had exclusive arrangements for distribution of tetraethyl lead in their territory, and I felt that again, while we were in the development stage, it was unsound for them to consider at that particular time the manufacture, because it would have prejudiced their position with other suppliers in that territory. That is the reaction I get from what I said in this letter, particularly related to the quotations that you made from the letter.

Q. Yes. Directing your attention to the second sentence in that last paragraph I was reading to you:

"I question whether it will be good business from our standpoint for them to manufacture tetraethyl lead and at the same time have such a large slice of the distribution on same."

Weren't you expressing there a purely commercial consideration that you didn't want them to be engaged both in the manufacture and the exclusive distribution of tetraethyl lead?

A. Yes, I thought they were in conflict with respect to other distributors of oil in their particular territory.

Q. And you felt "from your standpoint," you mean General Motors?

A. Absolutely. When I speak of "our" in all of these things, it is always General Motors.

[fol. 3156] Q. Then you go on to say that:

"I feel that in the final analysis the du Pont Company can manufacture the material at the lowest cost plus a reasonable return and that under such a consideration there would only be a manufacturer's profit in it for the Standard Oil Company and that they could employ their capital to equal, if not better, advantage in their own business than in the manufacture of tetraethyl lead and that our permitting them to get into that manufacture will be a disturbing influence and would throw an uncertainty on the whole situation that would not be constructive."

Were you expressing here a fear that the Standard Oil Company, if it engaged in manufacture of tetraethyl lead, would be in competition with the du Pont Company?

A. No, I didn't care anything about that. What I was concerned with was that, in the development stage, it would involve a lot of confusion, and we might better wait until the development had moved farther along, and then we might take such action as subsequent experience justified.

Q. I note that, in that sentence, you state "There would only be a manufacturer's profit in it for Standard Oil" and that they "could employ their capital to better advantage in fields other than tetraethyl lead."

You were there expressing a view of yours that the manufacturer's profit would normally be a relatively small profit on capital investment?

A. No, I think my statement with respect to the Standard Oil was rather paternalistic, from their standpoint. I think they didn't need my help, but I thought the principle I was working with was that there should be a separation between [fol. 3157] the commercialization of it and the production. That is really the idea that runs through the whole paragraph.

Q. I notice that this letter is prefaced by your statement that you had a talk with two or three of the high officials of Standard Oil. In that discussion did you point out to the Standard Oil officials that at most they would have only a manufacturer's profit if they engaged in the manufacture of tetraethyl lead?

A. I don't recall any detailed discussion of what took place at the talk referred to. I think probably the best answer to that would be the letter itself.

Q. Next I show you Government's Exhibit No. 623, Mr. Sloan, which is the reply to this previous letter we have just discussed, written by Irene du Pont, addressed to you, on February 2, 1924, and in the first paragraph, it is stated:

"I have talked over your letter of the 28th with Mr. Harrington and find we are all in accord as to the proper course of procedure."

I presume that that refers to the last part of your letter in which you stated that:

"I personally would much rather obtain a license from them—"

meaning Standard Oil—

"—pay for it and get the du Pont Company to use it in reducing the cost than I would to deal with the Standard Oil Company as a manufacturer."

Is that a fair conclusion?

[fol. 3158] A. Well, I think that the conclusion is better defined by what Mr. Irene says. This was Mr. Irene's letter, wasn't it?

Q. Yes.

A. What Mr. Ireneé says in the balance of the letter of February 2, 1924. He suggested that I write the Standard Oil Company along certain lines. I differed completely with the recommendation. I wrote Standard Oil along entirely different lines.

Q. Now, this refers, does it not, to the point that Standard Oil should be approached with a view of buying the license from them, rather than licensing them to engage in the manufacture of tetraethyl lead? Isn't that right?

A. I don't recall whether it was or not. I am a little confused on that. Perhaps if you say that again, I can answer it better.

Q. I am really paraphrasing your statement, your last sentence in the previous letter, which begins at the bottom of the page there, where you stated that you had personally—

A. Oh, yes, that is correct. In other words, in line with what I have already said, keeping the two functions, distribution and commercialism, separate.

If Standard Oil had a process, and it developed subsequently that they had, I thought it would be better for du Pont to take a license from them and pay for what it was worth. You are correct, if that was your question. I am sorry I was confused.

Q. In connection with this letter which you received from Mr. Ireneé du Pont, who suggested that in effect you inform the Standard Oil people to get in touch with the du Pont people regarding this new process for tetraethyl lead, I believe on direct, and I think just a few moments [fol. 3159] ago, you stated that you disagreed with that suggestion and took an entirely different course.

Now, I show you Government Exhibit No. 624. This is in reply to the previous letter you received from Ireneé du Pont, and is dated February 5, 1924.

You state in the first sentence:

“Dealing with your letter of February 2nd, I note that we are all in accord with what should be done. In view of the nature of my conversation with the Standard Oil people of New Jersey, I think it might be best—and I believe you would agree with me if you had been in the conference—to write them along somewhat

different lines but essentially covering the same point."

Is this the letter to which you referred on your direct examination as expressing your disagreement with Irene du Pont's proposal?

A. Yes, that is correct. My recollection was, irrespective of what I said to Irene, the letter I wrote to Standard Oil differs quite materially. I think there are other records that support that position.

Q. Yes, you are referring now, I presume, to the paragraph numbered 3 on page 4, where it is underlined:

"As to your manufacturing tetra ethyl lead for our account. As I told you in our conference, we feel that the rapid developments of the plant that we have built for the manufacture of tetra ethyl lead and the fact that the whole picture is more or less in the development stage, makes it desirable to refrain from discussing this situation at the present time. You must appreciate, as I have no doubt you do, that the present price of tetra ethyl lead has nothing to do with the ultimate price and the ultimate price will be based [fol. 3160] upon the lowest possible cost that can be developed through large production and effective manufacturing means plus a reasonable return on the capital employed. In other words, a manufacturer's profit."

Now, is this your suggestion to Standard Oil, that all that would be in it for the manufacturer would be the so-called manufacturer's profit?

A. The manufacturer's profit is meaningless, so far as a term is concerned. Manufacturer's profit depends entirely upon the thing you manufacture.

The fact that a manufacturer's profit is interpreted by you as necessarily a small profit is not in any sense so. It might be a very big profit. On the other hand, it might be a narrow profit.

It depends on the project. If it is a development project, the profit would be large. If it was a highly competitive project, the profit would be small. You can't deal with the thing in terms of generalities.

Q. All I am asking you, was it your intention in this letter to convey to Standard Oil the impression that the manufacturer's profit would be a narrow profit.

A. I hadn't any intention at all. I didn't know what it was. That would depend upon circumstances. This quotation you make is in support of what I previously testified here, to the effect that the whole thing was in a more or less development stage and made it desirable to refrain from discussing this situation, and many other situations, involved at that time.

We had to work ourselves into a position where we knew more about it in order to act intelligently.

Q. Now proceeding along in that paragraph to the last sentence on the opposite page,—do you see that? Page 5. [fol. 3161] It begins, "We shall at all times." Do you have that?

A. Yes. I have it.

Q. (Reading):

"We shall at all times, however, be glad to discuss with you the relative value of your process versus ours and after such analysis if it appears that your process has value, we shall be glad, in co-operation with you, to work out some plan which will be constructive and preserve all the equities in the case."

Now, in your covering letter to Mr. Irenee, you stated that you had written to Standard Oil along somewhat different lines, but covering essentially the same point as he had suggested.

Is this the sentence in your letter to Standard Oil that you had in mind?

A. Yes, it is. This statement, that we will be glad to discuss the relative values of their process, as you recall, took form shortly afterwards in the organization of the Ethyl Gasoline Corporation.

Q. This discussion relates to the so-called chloride process, doesn't it?

A. Chloride process was the process referred to that Standard Oil had, you are correct.

Q. Now, I believe in your previous testimony you stated that the Standard Oil people were rather interested in starting a small plant at Bayway. I think it had a rate

of production of about 100 gallons a day of tetraethyl lead. Do you recall that?

A. Correct, by the chloride process.

Q. By the chloride process, and it was apparently not intended that that would be a permanent plant, is that correct? It was to operate for only about six months?

A. That is correct. Although I don't know as there was any policy along the lines that you have just stated, but the [fol. 3162] setup of a plant was such as to justify the conclusion that it would operate a short space of time. It would be a pilot or experimental plant rather than a plant designed for production purposes.

Q. But isn't it true that at this time it was intended by you and others in General Motors and in Ethyl that the du Pont Company was to be the only important manufacturer of tetraethyl lead?

A. My position on that was, that at the beginning, in the initial stage, considering the hazardous type of manufacture, considering the competence of the du Pont Company and their experience in this sort of thing, that it would be desirable to continue them as a single source of supply up to a certain point.

When all those factors were resolved and we knew more about it, and competent competition had come into the field that was certainly supported.

Q. Yes. Now I would like to show you in this connection Government's Exhibit No. 660, which is Irene du Pont's letter to you, dated June 26, 1924.

I would like to turn to the last page, last paragraph, in which he states:

"It is essential that work be started on a chlorine method plant at once if forecasts of the probable needs of tetra-ethyl-lead are even reasonably borne out and if you are convinced that a check on prices by an independent plant is desirable and you should go ahead at once with the hundred-gallon unit at Bayway, you should give us a contract for enough additional output so that we also could build at once a hundred-gallon plant by the chlorine method of Deepwater and add to it, as rapidly as experience determined desirable, 900 gallons per day of additional capacity."

[fol. 3163] Then I show you your reply to that letter, Government Exhibit No. 661; which is dated June 27, a few days later, and I draw your attention to the first page, in which you state:

"We should immediately lay down a 1,000 gallon a day tetraethyl lead plant under your supervision at Deep Water, and make some sort of a deal concerning which I wrote you yesterday that is satisfactory to all parties—and there will be no difficulty as to this—which will serve to protect the capital you put into the enterprise and give you a reasonable return on the capital employed."

Then turning to the next page, paragraph 3, you say:

"For psychological reasons we should permit the Standard Oil Company of N.J. to expend \$35,000 or \$40,000 of their own money to experiment with the 100 gallon a day outfit in one of their plants, I believe in Bayway, in a building which they could use temporarily for the purpose. This will serve to satisfy them from the psychological standpoint and it is certain that it will be impossible to operate such an experimental plant successfully when the larger units are running, but it will give them a means to work out their viewpoint which certainly can do us no damage when we approach it from the bigger way."

Now, when you refer there to approaching it from a "bigger way", don't you refer to the fact that du Pont could really do all the important producing of tetraethyl lead?

A. This is in 1924, and I had not reached the point yet [fol. 3164] where I felt that we were better off by confining the manufacture of this type of thing to the du Pont Company.

Q. Well, I draw your attention to the next paragraph, in which you state:

"Any further thought of developing any real production other than under the auspices of the du Pont Company will be deferred until some later time."

Isn't it true you had no intention of having Standard Oil Company become the significant producer, that this was merely an experimental plant they were to operate?

A. My position was it was a question of competence, particularly from the standpoint of producing a dangerous material of this kind. My support of the project, the experimental project of Standard Oil Company in Bayway, indicated on page 3 of this letter, was because I always believed it is well to try anything that comes along in the way of a suggestion, because you always learn something.

I still felt that the interest of General Motors—and at this time, it was really the Ethyl Gasoline Corporation—was better conserved by limiting production of Standard Oil from the standpoint of competence to which I have referred several times.

In the proposal in Point 1 of the letter of June 27th, I suggested to Mr. Irenee that plans be laid down for a thousand gallons a day. The suggestion came originally from Mr. Frank Howard, who was about to be associated with us in the Ethyl Gasoline Corporation, which association had been agreed to at this time, but not defined in a definite agreement or contract.

Q. Mr. Sloan, isn't it true that, at this time, you believed that, as long as the du Pont Company had a thousand gal-[fol. 3165] lon a day plant in operation, that the Bayway one hundred gallon a day plant, would be obsolete and of little value to Standard Oil?

A. The Bayway plant was of little value anyway. It was purely an experimental plant, and could have had no particular value, directly or indirectly, from a production point of view. I looked on the plant largely as a research development program.

Q. Is that why you referred to it; that is, "for psychological reasons," you let them work it out with Standard Oil?

A. Yes. They were about to become partners with Ethyl Gasoline Corporation. What happened after that would be determined by the facts that were established at that time.

Q. Next I show you Government's Exhibit No. 676, which is a memorandum of the meeting of the Board of Directors of Ethyl Gasoline Corporation, dated December

23rd, 1924, and I should like to call your attention to the first page, the second paragraph, which reads:

"A lengthy discussion of the substitute for tetra-ethyl lead discovered by Dr. Bosch, of the National Anilin Soda Fabrik of Germany. During the meeting a cable was read indicating that a patent had been applied for by the Badische Co. on iron carbonyl; that Kettering stated he was sure that was the substance that had been shown him; that he found tests had been run on nickel carbonyl and iron carbonyl had been discussed as a possible anti-knock material a year or two ago; that it had been set aside because it was doubtful if the material could be produced commercially at a reasonable figure.

"Discussing the patent protection it was thought [fol. 3166] likely that the general patents owned by the Ethyl Gas would not hold for all anti-knock materials. Opinion of an eminent patent attorney was read indicating that to be the case. The particular patent on nickel carbonyl covered other nickel salts but apparently did not cover other carbonyls. They would try to get this patent extended for that purpose. In the meantime a fight on the Badische patent on iron carbonyl would probably delay its use for a protracted period. It was felt that it would be desirable, however, to obtain patent on iron carbonyl from the Badische Company if it could be arranged."

Then turning to the second page; this is a report prepared by Irene du Pont, and then he states:

"At my suggestion the cable replying to Dr. Bosch was worded in a way that indicated lack of urgent interest and that the matter of negotiating with Badische had been referred to the du Pont Co. The objection of this was so that we could get a better deal for the Ethyl Gas Corporation on the one hand and give du Pont a better opportunity to deal with Badische on other questions."

Referring now to the first page, Mr. Sloan, why was it desirable to have the Ethyl Gas Corporation obtain the Badische German patent on iron carbonyl?

A. Well, it was considered at that time that it might develop as an additional or perhaps more effective anti-knock compound. Iron carbonyl had been used in Germany and had quite a fair record of acceptance. In all our tests it failed. The reaction of the wear on the cylinders and [fol. 3167] pistons and so forth was such that we could not use it.

Q. Isn't it true that the Ethyl Gas Company was interested in obtaining control over any and all substitutes which might arise, or new inventions which might arise as an anti-knock material?

A. Well, the Ethyl Gasoline Corporation was in the anti-knock compound business, and if any compound came into the picture that offered advantages towards efficiency, the Ethyl Gasoline Corporation, of course, would naturally want to use it because it would be to their interest to do so, as compared to the existing products of tetraethyl lead. That happens in any business.

Q. Yes. On your direct examination, if I recall, you stated that the interest of General Motors in tetraethyl lead was almost—well, was primarily and was very heavily, purely to increase the efficiency of the automobile engine that would be promoted by the use and introduction of tetraethyl lead?

A. I confirm that opinion.

Q. But that was not the sole purpose of the Ethyl Corporation which the General Motors Corporation had fifty percent interest in, isn't that true?

A. Well, it would be so to the extent that General Motors had a fifty percent interest.

Q. Well, I mean the Ethyl Gasoline Corporation did attempt to get control for use in North America of all substitutes for tetraethyl lead, isn't that correct?

A. Yes, but it was to the interest of General Motors that such development take place because that would improve the main objective of General Motors in the tetraethyl lead problem, to develop a better coordination between the engine and fuel, to increase the efficiency of the motor car, in which we were primarily interested.

[fols. 3168-3170] Q. Do you have any recollection as to whether there were any discussions in the meetings of the Board of Directors of the Ethyl Corporation which indi-

cated that there was a fear that the German Badische would sell their iron carbonyl in this country in competition with tetraethyl lead?

A. I never heard of such a thing.

Q. Turning to the second page of the document, the part that I have just read, that paragraph stated that negotiations with the Badische Company were being turned over to the du Pont Company, and it says it would give to the du Pont Company a better opportunity to deal with Badische on other questions.

Do you know what the other questions were that the du Pont Company had with Badische?

A. No information whatsoever. I know nothing about the du Pont business directly or indirectly.

Q. So far as you know, they did not relate—those other questions did not relate to tetraethyl lead?

A. My impression is that there is no relation. I have already said I don't know, so I cannot really answer your question, but I am very sure that the du Pont Company had very important relationships with this German chemical company, and I am sure that this particular reference to other questions did not relate to anti-knock compounds.

Q. I gather this matter of having the du Pont Company handle the negotiations for Ethyl was the subject of discussion at this meeting of the Board of Directors of Ethyl in 1924?

A. I don't recall that it was, but that is Mr. Irene's interpretation of it, and I have no reason to believe that he was misrepresenting. Of course, the idea of asking du Pont to conduct negotiations was it could get a better deal than Ethyl Corporation; that was the primary object in considering the problem at that time.

[fol. 3171] Q. It is true, is it not, that the du Pont Company had handled negotiations with the Badische Company for Ethyl, for this iron carbonyl?

A. I am a little hazy on that, but I think you are correct on that. I think eventually that agreement was made between Badische and Ethyl Gasoline Corporation which gave Ethyl Gasoline Corporation the right to use iron carbonyl, but nothing came of it, because iron carbonyl was an unsatisfactory product, so far as anti-knock quality, because it caused too rapid deterioration of the working parts of the engine. It has never been used.

Q. To clear up one or two statements in your testimony, let me show you Government's Exhibit No. 713, which is an abstract from the minutes of the meeting of the Executive Committee of General Motors, in which it states that the president advised that the du Pont Company is sending a representative abroad to negotiate with the Badische Company for this compound.

Does that refresh your recollection that that was actually handled by the du Pont Company?

A. Yes, I think it was. I think the patent agreement between Ethyl Gasoline Corporation and Badische was worked out, or du Pont took a considerable amount of leadership in it. Whether the eventual details were worked out by them, I am not prepared to say.

Q. I show you Government's Exhibit No. 723, and this is, I assume, the agreement to which you referred.

A. Yes.

[fols. 3172-3179] Q. That was entered into between I. G. Farben Industrie and Ethyl Gasoline Company covering this iron carbonyl substance?

A. This appears to be the agreement I referred to a minute ago. It is the first time I have seen it, but it appears to cover the point, according to my recollection.

There was such an agreement between the two corporations, Ethyl Gasoline and Badische Company.

Q. Do you know, Mr. Sloan, whether any efforts were made to try out this iron carbonyl, any efforts made by the Ethyl Gasoline Corporation to try out the commercial potentials of this iron carbonyl?

A. At that time, very important efforts were made by their research activities and those efforts continued over the years. A great deal of time and talent had been put in to try to make iron carbonyl effective, but the results so far have been unsuccessful.

[fol. 3180] Q. Yes. Was your recommendation that Mr. [fols. 3181-3183] Midgley be supplanted by a new man as president of the Ethyl Gasoline Corporation motivated at all by virtue of Mr. Midgley's position in the dispute of the amount of the du Pont claim?

A. Oh, no, not at all. It was clearly that we had to have an executive for business of that magnitude. Mr. Midgley, as you know, was a research man. He had no business

experience. We had to have a business executive. It was clear to me right at the time we started, but there were certain objections so in line with my general policy, we let the thing develop until it became apparent to everybody, at which time Mr. Webb was appointed.

Q. And it became apparent to everybody that this was regarding the settlements of certain du Pont claims?

A. It happened to be coincidental, but one apparently had nothing to do with the other. Anybody that knows anything about business knows you cannot conduct a successful business without a capable executive, and Mr. Midgley was a research man, not a capable executive.

[fol. 3184] Now, I would like to show you Government's Exhibit No. 704, which you will note is dated February 8, 1926, which is approximately two weeks after the preceding document. This is a letter which you wrote to Irene du Pont stating that:

"I have your very kind letter of February 5th dealing with certain phases of the Ethyl Gasoline situation.

"I have felt for some time that you were, in a way, out of harmony with the way things were developing and I do not know as I blame you. There are many things which I am out of harmony with myself. Your letter gives me an opportunity to sit down and discuss them personally.

"First. I am not now in harmony, and never have been, with the discussion with your company regarding the cost of tetraethyl lead. So far as I am concerned, if you tell us what it should be I would be satisfied to accept it as being a proper and constructive price"—

Mr. Sloan, doesn't this indicate a change in position from your previous letter to Mr. Webb concerning the price charged by du Pont?

A. No, I don't think it does. I think we were trying to get the price down, but I was satisfied that the price that du Pont made would be a fair and equitable price. I only asked Mr. Webb to get into the thing and make an examination. At this time, the reason I say that, I was not perhaps concerned with the matter of price, because I had confidence

that they would do the right thing, because they believed that if the price was reduced, the volume would increase. [fol. 3185] Q. Was your position in this letter influenced at all by the protest you had received from Irene du Pont regarding a reduction in the price of tetraethyl lead?

A. I don't get that. I think that letter was to refer to the settlement of the contract, Mr. Harsha. I am a little confused on that point. In that letter it spoke of the \$1.66.

Q. Yes?

A. I think it referred to the price, but it meant the contract. I am confused on that.

Q. Isn't it true, though, at this time Irene du Pont was maintaining in his negotiations with the Ethyl Company, that the price then charged by du Pont was as low as was reasonable to expect?

A. I wouldn't know that, because I was not in the negotiations.

Q. And passing to the next sentence, I direct your attention to the statement that:

"On the other hand, you must recognize that I am essentially, or at least believe and hope I am, a member of the du Pont family and having, rightly or wrongly, formed this association with our friends the Standard Oil Company of N. J. and they knowing my position, it places me in a very embarrassing situation and I have felt, therefore, that I could help more in an indirect way by keeping my mouth shut."

Were you, in this letter, identifying yourself with the du Pont point of view?

A. No, I don't think so. What I did say there, that I was a member of the du Pont family, I was only a member of the du Pont family to the extent that the du Ponts were interested in General Motors. I used the expression "family" from the standpoint of community of interest.

[fol. 3186] At this time, and continuing up to the present time, we have used the term in our organization work, "the family" in terms of a community of interest, and I meant there, therefore, that we had a community of interest with the du Ponts to the extent that they were interested in General Motors. Outside of that I was not—the question was not involved.

Q. But didn't your position in this letter conflict with the interest of General Motors at this time?

A. No, I don't think it did, because the letter was a summary of the circumstances that had developed in the evolution of tetraethyl lead, and later on in the letter I registered considerable differences between Irenee and myself, like on the question of standardization, and so forth.

Q. Yes, but in this particular issue, the issue was whether du Pont should reduce the price of tetraethyl lead to Ethyl, and it was in the interests of General Motors to get as low a price as possible?

A. It was to the interests of General Motors to get as low a price as possible, and my letter to Mr. Webb was to make an examination to see if the price was as low as they would consistently make.

Q. And in this letter you are expressing to Mr. Irenee du Pont that you were not now in harmony with this discussion with du Pont, regarding the cost of tetraethyl lead, isn't that right?

A. Only to the extent that I had confidence in him that he would do the right thing.

Q. Then I show you Government's Exhibit No. 705, which is a reply to this last letter, written to you by Irenee du Pont, in which he says:

"Thank you for your letter of the 8th."

[fol. 3187] And he states:

"Admittedly I was somewhat ruffled at the lack of progress of the Ethyl Gas Corporation; also at their attitude on du Pont's proposition to make tetraethyl lead. We certainly have the hard end of the job, and questioning a few cents a pound, which means hundredths of a cent per gallon for our services, seems so very out of place compared with preemptory knocking off 50c or \$1.00 a pound, equivalent to the price charged for Ethyl Gas."

This is the position of Irenee du Pont, that the price was perfectly satisfactory at that time, isn't it?

A. Well, I wouldn't say that. I think probably that is right. He pointed out that the difference in the price of tetraethyl lead in terms of the price of ethyl gas was in-

consequential. That is the way I interpret the first paragraph of that letter.

Q. Now, I would like to show you Government's Exhibit No. 710, which is your letter to Mr. Irenee du Pont of December 12th, 1924, and I call your attention to the fact that this is your invitation to him to join the Board of Directors of Ethyl, and in the second paragraph, the second sentence, you state that:

"Du Pont will always be the manufacturing agent of Ethyl Gasoline Corporation whether we make tetraethyl lead or whatever we make, now or in the future. I am sure of that. New anti-knock compounds in the natural course of events are bound to come up from time to time."

Did you ever intend to license any other company to manufacture tetraethyl lead for Ethyl?

A. No, because we made a contract in the formation of [fol. 3188] the Ethyl, in which we transferred our patents to Ethyl Gasoline Corporation, both the Standard Oil Company and ourselves, and it was up to Ethyl Gasoline Corporation to determine that point.

Q. And the General Motors Company had a half interest in Ethyl, and therefore had a voice in determining the policies to be determined by Ethyl, isn't that correct?

A. That is correct.

Q. Didn't this statement of yours indicate that you were placing the du Pont Company in a preferred position as to a supplier of tetraethyl lead, to Ethyl?

A. I already testified to the effect that in any new development of any new product—and this was a very important instance of this kind—the question of price and so forth is not necessarily important. We want the lowest price we can get, and so far as dealing with du Pont is concerned, my point of view was that I would prefer to deal with them exclusively for a while until the program had gotten far enough along to take a different position.

I was always willing and would have supported any recommendation on the part of Ethyl Gasoline Corporation for another source of supply farther along when I felt the hazard was under control and we were dealing with a responsible producer.

Q. Did the hazard point, was it ever conquered in the production of tetraethyl lead?

A. Only by experience and know-how.

Q. In fact Ethyl never did, during the ensuing twenty years, license anyone else, did it, to manufacture tetraethyl lead?

A. I don't think it ever did license the manufacture of tetraethyl lead. On January 1, 1938, the whole picture [fols. 3189-3192] changed, and Ethyl became the manufacturer with du Pont as the agent, and that might have involved the licensing arrangement, but I don't recall anything else, any other instance at this time.

[fol. 3193] Q. I call your attention to the last page, Item (c):

"Leather Substitute—Rubber Coated Fabrics.

"It was brought out that the Du Pont Company has enjoyed the larger portion of General Motors requirements of these items. That on account of constantly increasing consumption, sound judgment demands the maintenance of more than one source of supply. That the Du Pont Company has been afforded the opportunity of meeting competitive prices and that competitors now believe that no matter what price they put in they would receive no business."

Mr. Sloan, you indicated, I believe, that you first became aware generally of the car division operations when you became the operating vice-president of General Motors in early 1921?

A. Correct.

Q. During that time, up until the date of this meeting, which was in September of 1923, wasn't it true that the du Pont Company had obtained the larger portion of G.M.'s requirements in these products, leather substitute and rubber coated fabrics?

A. I would have no information on that point because of the fact that where purchases are made by the divisions, they are made under the auspices of the general manager of that division. Records never come above the general manager. That is his responsibility. He acts on his own [fols. 3194-3195] initiative, and I would have no informa-

tion at all on anything pertaining to purchases when it is within the area of divisional activity.

Q. Does your answer also apply to the statement; the last sentence of that paragraph, where it is stated that:

“That the Du Pont Company had been afforded the opportunity of meeting competitive prices and that competitors now believe that no matter what price they put in they would receive no business.”

A. If I recollect right, that is, if you refer to minutes of the General Purchasing Committee, two or three meetings before, you will find that it is recited that it is the practice of the industry to give an opportunity to meet competition and du Pont was no exception.

I have already testified here in principle that the reason for that was that in purchasing materials for automobile production, the question of quality and reliability of supplies was more important than price. When a producer has a very satisfactory relationship with a supplier, and somebody else comes in, the tendency was at that time—and maybe now, I don't know so much about now—to give the old supplier a chance to meet, to a reasonable degree. That is what is referred to in this record here.

[fol. 3196] Q. Next I would like to show you Government's Exhibit No. 378. This is a communication addressed to you by Mr. P. S. du Pont, at the time he was president of the General Motors, dated October 19, 1922; stating:

“Attached please find copy of letter to Mr. Irene du Pont. Will you please instruct the several Divisions to give the du Pont Company some rough estimate of du Pont enamels that may be required by them. This business may prove to be a large one and will require the construction of additional facilities. If the materials develop successfully, no time should be lost in their introduction on all of our models.”

Do you recall whether you carried out Mr. du Pont's instructions to obtain the estimates of the car divisions for [fols. 3197-3198] these du Pont enamels?

A. I don't recall that I did, but you will recognize that this was in the early days of the development of “Duco”,

the importance of which is already in the record here. Undoubtedly what Mr. Pierre was interested in was being sure that there was enough capacity to produce "Duco" at such times as General Motors began to adopt it on a quantity basis.

As a matter of fact, within a year after this or less than a year one of our important divisions adopted it exclusively.

Q. This reference up here to du Pont enamels is really a reference to "Duco", isn't it?

A. That is my assumption. I am not too certain about it. It looks so to me. That is the way we referred to it.

Q. Addressing your attention to the date of that, which is October 1922, wasn't this before "Duco" had received the approval of the General Motors Paint Committee?

A. We received the approval of the Paint and Enamel Committee in January, 1923, but it frequently happens in such cases that we know the approval is unofficial, perhaps, before that time. That might be written from that point of view.

I feel certain at that time we were convinced that "Duco" was a must so far as our production was concerned. I think Mr. Pierre's purpose, as I said before, was to insure capacity that would equalize demand.

[fol. 3199] I show you now Government's Exhibit No. 367, which is your letter to Lamot du Pont in this series, dated November 11th, 1926, in which you state:

"Dealing with yours of the 9th and referring to my conversation with you this afternoon after the Board meeting, let me say that I have no objection to your giving our schedules to Mr. Allen confidentially, but I am only willing to do that because you are a member of our family, for under no circumstances would we wish our schedules to get into outside hands and the only modification is the argument that you are not an outside party."

Is this your letter to which you referred in your answer that I just read that you made on direct examination, Mr. Sloan?

A. Well, I have already stated on direct examination at length the fact that this information was not controlling [fol. 3200] because of the many adjustments that had to be

made between the production schedules and inventory. I do not think I need to repeat that.

Q. No, it is not necessary.

A. It is already in the record.

Q. Yes.

A. But in releasing this to Mr. du Pont, he seemed to be very much upset and interested, and I simply released it to him in order that I might have an opportunity to look into it to see whether the schedules were properly arranged, and so forth, because on direct examination there was introduced a record of how we were trying to adjust our sales to consumer, our production with our inventory, in order to get the maximum efficiency. The only reason that I put it that way is I didn't want to have the official production records go out publicly because it was misleading to our suppliers. A supplier should be limited to the releases that the purchasing department gave to the supplier.

He speaks here in this letter about information and cooperation. Giving him the production records which he had would not help him along this line at all. The guide he should work to would be the releases from the Purchasing Department which considered the various adjustments that had to be made.

Q. You were not attempting to put the du Pont Company at a disadvantage or mislead them, were you?

A. As a matter of fact, look at it this way. The only way a manufacturer can make money is by producing something and selling it at a profit. Now, whatever information the du Pont Company had on production schedules had in no sense changed the amount of "Duco" we sold, [fols. 3201-3202] because the amount of "Duco" we sold would depend on the number of cars we sold. When a man buys a General Motors car, he does not buy it on the basis that Mr. du Pont had that information. He doesn't know anything about it. He buys it from an entirely separate consideration, and there were no economic advantages flowing to the du Pont Company in giving them this information.

Q. But you were treating the du Pont Company in a favored or preferential way, weren't you?

A. I don't think I was. I was giving them some information which I contend was of no value to them. I had been

a supplier as well as a producer, and my contact with the Ford Company, and Ford was a large supplier, let me know what the Ford production schedules were. That meant nothing to me. What I was interested in, the Ford Company would get this information from the Purchasing Department.

[fols. 3203-3205] Q. Laying aside that particular paragraph, it says nothing about agreement, but says "From in or about 1917, has purchased all or substantially all of its requirements of tires and trucks and other items produced by General Motors" and this would tend to support that statement, would it not?

A. I do not think so. This is a decision on the part of the du Pont Company to buy from General Motors. That is not extraordinary. A lot of manufacturers are using cars and trucks in a big way with which we have exclusive contracts. That doesn't mean that there was an important agreement along the lines I was asked for in the direct examination, according to my understanding.

[fol. 3206] By Mr. Harsha:

Q. Next I should like to show you Government's Exhibit No. 276, which is a chart showing the membership of the Bonus and Salary Committee of General Motors during the years 1941 to 1948, and you will note that the first name listed is Mr. Walter S. Carpenter, Jr., who had been, I believe, in those years, president of the du Pont Company. That is during the years 1941 to 1943. You will also note that the next listed is Mr. John J. Raskob who also retained executive connections with the du Pont Company.

The next is Mr. Lammot du Pont, who was apparently chairman of the committee, and I believe previous to this had been president of the du Pont Company and was then chairman of its Board.

And following down, you will note the names of Henry B. du Pont and Angus Echols, all of whom were at that time connected with the du Pont Company.

Can you tell me, Mr. Sloan, why there were so many du Pont representatives on the Bonus and Salary Committee?

A. I don't know any reason for that. It just happened that way. The facts are that the bonus plan provides that [fol. 3207] the recommendations of the bonus allotments

are entirely in the jurisdiction of the chief executive of the corporation, for the simple reason that they are not in touch with the operation of the business, and they cannot evaluate thousands of people so far as performance is concerned. Therefore they must rely on the chief executive officer. The function of the Bonus and Salary Committee is largely to review the distribution of the bonus.

Q. I believe on direct examination, you described the mechanics by which the recommendations were made, that they were made up usually from the division level and reviewed finally by the president, and then submitted to the committee.

My question on that is, isn't it true that the membership on this Salary and Bonus Committee would enable a member of that committee to learn a great deal about the personnel in General Motors?

A. Only to a very limited extent. There were at that time something like 10,000 executives. You can appreciate there can be very little intimate contact between members of the Bonus and Salary Committee and 10,000 people distributed all over the world.

Q. Just a few general questions, then I will be through, Mr. Sloan.

A. Thank you.

Q. The records in this case indicate that since about the end of 1917 the du Pont Company has held a very large block of General Motors common stock, that amount varying in percentage over the years from 1917 until the filing date of this complaint, and it ranged from around 23 per cent up to a high of 38 per cent, and I believe since the dissolution of the Managers Securities Plan, the stock has remained rather constantly at a figure of around 10,000,000 shares.

A. That is General Motors Securities?

[fol. 3208] Q. Yes. Would you say that during this period of time the relationship between General Motors and du Pont has been the ordinary arms length relation of buyer and seller with respect to the products that du Pont supplies to General Motors?

A. I would say absolutely so.

Q. Wouldn't you say that the du Pont's possession of approximately 10,000,000 shares of General Motors stock

has necessarily affected the relationship between the two companies so that they have become, as you expressed it in one of your letters, one family?

A. You had better repeat the question. I lost the first part of it.

Q. Wouldn't you say that du Pont's ownership of this 10,000,000 shares of G.M. stock has necessarily affected the relationship between the two companies so that they have become, as you expressed it in one of your letters, one family?

A. No, I don't think so at all.

I have been asked on direct examination, and by your good self many questions along the lines as to whether there was any influence that affected the operation of General Motors Corporation. I can say with complete conviction that every decision that has been made by General Motors Corporation by myself, and so far as I know the other executives concerned in its operation have been entirely in the interest of General Motors, and of the stockholders. I am as sure of that as I am of anything in life.

Q. Nevertheless, it is true that du Pont's possession of these 10,000,000 shares of General Motors stock has resulted in the du Pont Company representatives being placed on the inner councils of the General Motors Company, and has given them representation on the General Motors board and on the General Motors committees so [fol. 3209] that they have had a powerful influence on the policy of General Motors, isn't that so?

Mr. Cox: I object to the form of the question. There are two or three questions, your Honor.

The Court: The question ought to be shortened. I sustain the objection.

The Witness: Am I to answer that?

Mr. Harsha: No. I will rephrase it.

By Mr. Harsha:

Q. I say nevertheless it is true that du Pont's possession of or ownership of these 10,000,000 shares of GM stock has resulted in representatives of the du Pont Company being placed on the General Motors Board, isn't that true?

A. They are entitled to that representation.

Q. And du Pont representatives have also been placed on the high policy committees of General Motors, isn't that true? Q.

A. That is very true, but you are dealing now with policy matters at a very high level. You are not dealing with the operations of the business around which your other questions revolved.

Q. In one of your letters, you refer to the so-called du Pont influence. Wasn't that the influence that they were able to exert on the policy decisions of General Motors?

A. No, I referred to the du Pont influence from this point of view; that was association. If I recollect the record, as you refer to it, I was anxious to have the cooperation of the du Ponts because they were able business people, and importantly interested in the operational side. I believe I testified to the effect that over the years, and I [fol. 3210] started in 1921 with the Executive Committee, as the years passed they have completely withdrawn from operations and their position even on the financial side of the business has been reduced. That is what I mean by influence. I mean cooperation in the business.

Q. You have also referred to it as a community of interest. Wasn't that another way of expressing it?

A. That may be.

Mr. Harsha: I think that is all, Mr. Sloan.

Redirect examination,

By Mr. Hurd:

Q. Mr. Sloan, I have a very few questions. First, I should like to show you General Motors Exhibit No. 35, which is a chart showing the relative positions of the various automobile manufacturers in the year 1921, also General Motors Exhibit No. 36, which is a chart reflecting the information contained on General Motors Exhibit No. 35.

In your cross examination, you were asked whether or not 1921 was a normal year, and I believe you answered that it was subnormal. I would like to ask now what you meant by your answer that it was subnormal.

A. I meant that there were conditions, economic conditions prevailing at that time that reduced business. I think on direct examination I stated that the price levels

were being adjusted, and prices were falling, and that discouraged the purchase of cars. The first quarter of 1920 was a very good quarter. After that, there was a decline, and that continued till 1921, and 1921 was a subnormal year both for General Motors, and, although I have not seen the [fol. 3211] record from other producers, the economic conditions being what they were, it must have been reflected through the whole industry.

I venture to say that if the facts were available, 1921 would be a subnormal year on the part of all producers.

Q. Now, I wish to call your attention to Government's Exhibit 850, which is the contract for the formation of Kinetic Chemicals entered into in 1930, and I call your attention to paragraph Seventh which appears on the third page, in the middle of the paragraph:

"—it being further agreed that future chemical developments, (other than those relating to 'said products') originating in the laboratories of General, or its subsidiaries, shall be offered by General to the New Company—"

That is the Kinetic Chemicals; the New Company was Kinetic Chemicals?

A. That is correct.

Q. (Reading):

"—on such terms as may be mutually agreed upon."

Mr. Sloan, was there any chemical discovery by General Motors or any of its subsidiaries ever transferred to the New Company under this paragraph of the agreement?

A. No.

Q. One last document, Mr. Sloan. On your cross examination, you were asked about iron carbonyl.

A. Yes, sir.

Q. As an antiknock?

A. Yes.

Q. I believe you were asked as to who it was who conducted the negotiations with the German concern over the patents relating to iron carbonyl which finally resulted in Ethyl Corporation taking a license from the German concern with respect to iron carbonyl, and as I recall your

answer, you said that those negotiations were conducted by [fol. 3212] the du Pont Company. I would now like to show you Government's Exhibit No. 722 which is a letter from Dr. Abel. That appears on the second page, to Mr. Howard of the Standard Development Company. Does that refresh your recollection regarding who it was that conducted the negotiations that finally culminated in Ethyl taking a license for iron carbonyl?

A. Yes, sir, it does, Mr. Hurd. It appears that while du Pont was concerned with it up to a point, they finally retired from the situation, and the matter was taken up by the Ethyl Gasoline Corporation, Mr. Frank Howard.

Mr. Howard conducted the negotiations, and the license agreement that I think du Pont developed otherwise was worked out by Mr. Howard in the interest of the Ethyl Gasoline Corporation.

Q. Mr. Sloan, on your direct examination you testified in substance that as far as you knew there was never any agreement or understanding between the du Pont Company and General Motors that General Motors would favor the du Pont Company as a supplier.

Has there been anything in your cross examination to cause you to change your mind as to that?

A. There has not. So far as I know, and as far as the record discloses, to my mind, there has been no change. I still maintain the strongest conviction that all transactions were at arm's length based upon the interest of all the stockholders in General Motors, and no other consideration entered into it so far as business judgment goes.

Q. You also testified on your direct examination that there was no agreement or understanding between the du Pont Company and General Motors pursuant to which [fol. 3213] General Motors would give to the du Pont Company any chemical discovery.

Has there been anything in the cross examination to change your mind as to that?

Mr. Harsha: I object to that, your Honor. I think it is calling for a conclusion of the witness. He has already testified regarding the change in his testimony on direct.

The Court: Read the question, please.

(Question read.)

The Court: Overruled.

Mr. Hurd: You may answer.

The Witness: I may answer. Will you repeat the question, please?

The Court: Read the question.

(Question read.)

By the Witness:

A. No, no change at all, Mr. Hurd. I just want to say, however, on that account that in my examination I was under a year ago, I was asked a similiar question, and as far as I know the answer is no. The Kinetic Company comes into the thing.

When I was asked yesterday, I was a little confused as to whether that was a contract, and I interpreted that it was not a contract; that it is not involved in the contract question.

That was a special arrangement whereby General Motors turned over a certain chemical discovery to a company in which du Pont and General Motors were interested for [fol. 3214-3217] exploiting the invention in the interest of General Motors. I want to make that distinction to avoid any confusion.

By Mr. Hurd:

Q. You are referring to Government's Exhibit No. 850 that I showed you a moment ago?

A. Yes.

Q. You are referring to the transfer of the Freon patent to Kinetic Chemicals?

A. That is right.

Q. But as far as you know, was there ever any understanding that any discoveries in chemicals would be turned over to the du Pont Company?

A. I know of no such understanding whatsoever.

Mr. Hurd: That is all, if the Court please.

[fol. 3218] Mr. Hurd: Mr. Pratt, will you take the stand, please.

JOHN LEE PRATT, called as a witness on behalf of the defendants, having been first duly sworn, was examined and testified as follows:

Direct examination.

By Mr. Hurd:

Q. Mr. Pratt, will you please give us your full name?

A. John Lee Pratt.

Q. Where do you live, Mr. Pratt?

A. Fredericksburg, Virginia.

Q. Where did you secure your education?

A. I graduated in civil engineering at the University of Virginia.

Q. In what year?

A. 1905.

Q. Where was your first employment?

A. My first employment was with the du Pont Company.

Q. What year did you go with that company?

A. July 1st, 1905.

Q. Briefly, what were the circumstances of your going with the du Pont Company?

A. Well, I had been asked to teach at the University of Virginia, but I told the professor I owed money, and I did not think I would make enough money to pay my debts if I did, and I asked him to assist me in getting some names I might write to, and one of the companies that he gave me was the du Pont Company, and told me to write to Mr. H. M. Barksdale. That resulted in my getting a job with the du Pont Company.

Q. What was the type of work that you did when you first started with the du Pont Company?

A. When I first went there, I had just miscellaneous surveying and drafting work for about three months. [fol. 3219] After that, I went to Parlin, New Jersey, where I built a sewer about two miles long to take acids away from the plant.

Q. What plant did the du Pont Company have at Parlin?

A. It was called the International Smokeless Powder & Chemical Company at that time, but they have recently purchased it.

Q. Did anything happen in that plant while you were working there?

A. Yes, while I was there, in October, they had an explosion that killed four men who were working in the pyroxylin plant. That impressed me pretty much of the danger I was in.

Q. Do you recall whether the plant was shut down or not?

A. Yes, that particular part of the plant was shut down.

Q. What was your next work with the du Pont Company?

A. My next assignment was assistant engineer in building a dynamite plant out in the State of Washington.

Q. How long were you on that job?

A. I went there about the 1st of April, 1906, and left at the end of August, 1908.

Q. What do you mean by saying you left? Did you finish your job there?

A. No, I resigned from the du Pont Company.

Q. How long were you away from the du Pont Company?

A. About fourteen months.

Q. Briefly, what were the circumstances of your leaving the du Pont Company at that time?

A. Well, we had a misunderstanding. I suppose you would call it, about my expenses being paid. My agreement with the du Pont Company was that when I was away from Wilmington, all my expenses should be paid. I had no refunds on expenses from about the 1st of April, 1908, until [fol. 3220] the end of July, when they wrote me that they had changed their plans and were not allowing expenses, and they attempted to make it retroactive to April 1st, and I could not agree to it.

Q. What were the circumstances of your going back to the du Pont Company?

A. Well, some of the top fellows of du Pont wrote me that they would like to have me back as assistant chief engineer, or top man in the civil engineering, and I had tried a number of jobs and I decided I would like to go back to the du Pont Company, and I buried the hatchet and went back.

Q. This would be in 1909?

A. Yes, I went back in October, 1909.

Q. What was the nature of your work with the du Pont Company after you went back?

A. I was sent back to the Parlin plant in New Jersey. My job was to build a new pyroxylin plant, machine shops and things of that sort.

Q. This was the same plant—

A. Yes; the same location, same territory. It had not been rebuilt for four years.

Q. After that, what did you do?

A. I then went to Joplin, Missouri, to build a dynamite plant. I went there in March, 1910, and I stayed there until April, 1911.

Q. What happened at that time?

A. I was then assigned to different work. I was put in as the head of the civil engineering department of du Pont. That meant supervising other civil engineers, and we built a dam down in Oklahoma for water supply for plants; we built a dam up in Maine for a power plant to produce wood pulp.

We located a powder plant in Hopewell, Virginia, a dynamite plant, and another dynamite plant in Utah. That was quite a variety of jobs.

[fol. 3221] Q. How long did this take?

A. Well, I was on that work until the end of December, 1913.

Q. What did you do after that?

A. After that I made an agreement with the du Pont Company to go to Chile for two years to study the nitrate industry.

Q. Did you go to Chile?

A. Yes, I went to Chile in January, 1914.

Q. When did you return?

A. I got back in New York in October, 1914. The first World War had commenced and we could not do much down in Chile. We were not able to do the things we hoped to do, and they had me come back to help build powder plants to take care of the Allies in Europe.

Q. Did you go ahead on the work of these powder plants when you returned?

A. When I returned, I went down to Hopewell, Virginia. We were building a very large gun cotton plant. I was

very familiar with the water supply in that territory, and they sent me down there to get the layout, and I was supposed to build the plant. In Chile, I had lived a very hard life. The water was very bad, and the food was poor, and my health failed soon after I came back, and I had to go to the Battle Creek Sanitarium for about four months. That took me over into 1915.

Then I came back and took charge of the civil engineering works for the year 1915. At the end of 1915, I had typhoid fever and I was again out for three months. When I came back to the du Pont Company, they realized the bad situation in this country, depending on Chile for nitrate, because while I was down there in Chile some German war ships had raided the West Coast, and run all of the English ships off of the West Coast. That was one of my troubles. We came back in a boat that had no refrigeration.

[fol. 3222] Q. After your recovery from typhoid, what did you do?

A. Why, the du Pont Company had organized the American Nitrogen Company for the purpose of seeing whether we could not use a process that had been developed in Norway for the fixation of the atmosphere. Mr. Barksdale headed that outfit.

I went in as assistant to him and had the job of making the study of water power that might be available for fixation of nitrogen.

Q. How long were you with the American Nitrogen Company?

A. Well, I was active with or in the American Nitrogen Company until about July or August, I guess, in 1917. After that, why, we had gone into the war ourselves, and I don't know, I think somebody down in Washington had the idea that we had plenty of military powder capacity in the country, but we went to war, I think in April, and in September, they realized that if we were going to put additional troops in the field, we would have to have additional supplies, then I was detailed back to the Engineering Department—I think I was still on the American Nitrogen payroll—to help locate the plant for the Government for smokeless powder.

Q. And did you locate any plants for the Government?

A. Yes, we located—had about five locations which we

allowed the Government to choose from, one at Charleston, West Virginia, which was number one choice, and that was built by the Hercules Powder Company, I think they built that plant for the Government, and another one at Nashville, Tennessee, which the du Pont Company built starting about January 1st, 1918.

Q. Did you have anything to do with the building of that plant?

A. All I had—I had the duty to lay the plant out; that [fol. 3223] was, place the location of the buildings on the ground and get the railroad siding in, and then I became engineering contractor with the Government on their explosive plants.

Q. How long did you continue with that work?

A. I guess I officially continued that work until December 1, 1918.

Q. What change did you make then?

A. Well, I had decided to go in the Army. The work was getting relatively distasteful to me. They had a lot of young fellows that came in, and they were trying to tell us what to do, and they didn't know what to do, and politics were in it, and they were trying to locate plants where it would be very unhealthy for men to work in that kind of plant, and I think I then talked about going in the engineering service of the Government.

I had had a need of a surgical operation for a hernia which I had contracted down in Chile, and I had gone to the hospital and was in the hospital on Armistice Day after an operation. I came out of the hospital the latter part of November.

Q. 1918?

A. 1918.

Q. Then what was your next work?

A. Well; I went to Wilmington, and I was approached by Mr. R. R. M. Carpenter, who was vice-president, and at that time he was head of the Development Department, and he told me that General Motors had reached an agreement with the Development Department of the du Pont Company that there would be a section of the Development Department to do work for General Motors, and he wanted me to head that work up.

Q. And did you do that?

A. I did that.

[fol. 3224] Q. For how long did you continue with that work?

A. I continued that work until November 30th, 1919.

Q. What change did you make at that time?

A. At that time I went with General Motors as an assistant to Mr. Durant.

Q. Before you worked with this motor development section, had you had any contact with Mr. Durant?

A. Back in the spring of 1917 I had met Mr. Durant.

Q. What were the circumstances of your meeting him?

A. During that time Mr. Barksdale and I—Mr. Barksdale was head of the American Nitrogen Company—and I was working for the American Nitrogen Company. We had to go to New York quite frequently on business, and after we got through with our business he had the habit—I know of at least twice, of going up and talking with Mr. Durant, and he always took me along.

Q. And did you do any work for Mr. Durant while you were with Mr. Barksdale?

A. Yes, Mr. Durant used to talk over his problems with Mr. Barksdale, and he seemed to have great confidence in Mr. Barksdale's judgment, and his ideas of management, and one day Mr. Durant said that he was worried about the capital that was going to be required by the automobile industry, that the industry was growing so rapidly, that after the war was over it would be very difficult to get sufficient capital, and one particular thing that was bothering him was the housing situation in Flint, Michigan, where General Motors' Buick and Chevrolet plant was located.

He told us that the citizens had organized a civic improvement company back in 1916 to build two thousand houses in Flint. The housing facilities were very bad there, but the thing had sort of bogged down. They had built very [fol. 3225] few houses, but they were sort of waiting for the corporation to get back of it, and he was very much disturbed by the possibility of the corporation having to get into the housing business, which he didn't want them to do.

Mr. Barksdale told them that I was the du Pont expert. I was not much of an expert on housing. I had had some experience and had followed what other industrial com-

panies had done in housing, and Mr. Barksdale told Mr. Durant that he would be very glad to have me go up to Flint some week-end and size the situation up and inform him the best I could, and Mr. Durant asked me to go as soon as I could.

So the next Friday—I know I went on a Friday and stayed Saturday, Sunday and Monday, and came back.

He gave me letters to Mr. Walter P. Chrysler who was the manager of the Buick at that time. Mr. Chrysler was very much interested in the housing proposition, and gave me data on payrolls and things of that sort so that I could form some judgment as to what price houses they should be building.

I concluded that they were building houses too expensive for the men, and that was one of the reasons that they couldn't sell them.

Q. Did you make any report to Mr. Durant on that?

A. He asked me to make a personal report on my way back, and on my way back I came by New York and made a report. I told him that in my judgment the lots were too large because that meant excessive sewer lengths, water pipes, electric lines for each lot; that the utilities were quite a heavy charge with the way the town had been laid out.

I also told him that my examination of the payrolls at Buick showed that only about 150 men could afford to build [fol. 3226] houses, and they had planned to build two thousand. I told him if they had to build that kind of house they would have to subsidize them to get the men to buy them.

Q. Now, turning to the Development Section to which you have referred, how large a staff did you have in that section?

A. Well, I only had two men that reported to me there, but I had the use of other men in the Development Department, of specialists, and so on.

Q. And what was the general nature of the work that they carried on with this Motor Development Section?

A. Well, Mr. Durant was worried about shortages. He worried that they would build up a big automobile industry and there would be a shortage of petroleum, and there was another thing that bothered him and that was aluminum.

There was a monopoly in aluminum, and he had not been

able to buy aluminum at the price he thought it ought to be bought, and he couldn't get it at times when he thought he should get it.

Q. What, if anything, did you do regarding these subjects?

A. Well, we made studies of them, aluminum studies. I had had experience in the American Nitrogen Company, and I knew pretty near all of the water powers in the United States and Canada, and power was the chief cost in the manufacture of aluminum, and you had to have very cheap power, and also you had to have a source of ore, Bauxite, and the supply in America was limited, and the Aluminum Company of America had owned all of those good supplies. They had been in the field a long time, and in addition they owned quite large tracts down in French Guiana. They also owned some pretty good water powers and rented other good water powers.

[fol. 3227] As a result of our study we concluded that we better try to make a deal with the Aluminum Company of America to take care of us, rather than to go in the business.

Q. Do you recall whether or not you made any report on that to Mr. Durant?

A. Yes, a report was made to Mr. Durant. It wasn't quite finished when I left, but it was finished and sent to him.

Q. Do you recall any other subjects that you looked into while you were with the Development Section?

A. Well, I might say that when I went to the section there were two jobs that Mr. Carpenter had agreed with Mr. Durant to look into. One was the aluminum job. That seemed to be the most pressing because he saw the automobile industry expanding very fast, and he thought aluminum might be one of the limiting factors. It was such a limiting factor that we designed away from it.

The other one that Mr. Carpenter had agreed on was printing. I think Mr. Durant thought that we were paying too much for our advertising printing. One of the men I hired was Mr. Boden, who was an expert on printing costs. He had worked for the Saturday Evening Post for a number of years.

The other man I hired was a graduate in law, who had

never practiced law, but who had a very brilliant mind. I had known him since he was a boy.

We investigated plate glass. It looked like that was going to be something that was immediately important.

Q. At whose suggestion did you look into plate glass?

A. Mr. Durant's.

Q. What was your conclusion?

A. Well, there was an immediate shortage, it looked like, [fol. 3228] from the information we got. The Belgian glass plants had not been destroyed to the extent that we thought they had, and it looked like they would get back into production pretty quick.

There was another development at that time of heavy window glass that they thought we could use in the automobile industry. It wouldn't have to be ground like the plate glass we were using.

Q. With reference to the plate glass, what was the problem? What was the problem? Were you looking for sources of supply or considering manufacturing, or what?

A. Well, our study was mainly to find out just what the situation was, whether there was going to be a shortage. If there was a shortage, what steps should be taken to correct the shortage.

We never got into it far enough to determine who should attempt to make a plant or build a plant. In fact, we decided we thought the problem would solve itself by the Belgian plants.

Q. Do you recall any other subjects you looked into?

A. Well, I mentioned petroleum. I didn't look into that because I couldn't find a man. Mr. Durant, his question was, are we going to have a shortage of gasoline if we continue to build automobiles at the rate we are building, or if we continue to expand at the rate we were expanding.

The data on the oil fields that are today—all the oil people that we contacted, assured us that they would be able to take care of anything, but I never made a report on it because I never got much data.

Q. Do you recall whether or not you looked into the Hayes Wheel Company?

A. Yes, I did. Mr. C. B. Hayes had a plant at Jackson.

[fol. 3229] Mr. Durant asked me to go out and try to evaluate it and try to evaluate the business. I think it had

been a suggestion by Mr. Hayes that he would like to swap his plant for some General Motors stock, and Mr. Durant was always willing to make that kind of swap if it was on the right basis.

Q. What was your conclusion with reference to that?

A. I concluded that we oughtn't to do it, because Mr. Hayes wanted to get out of the business, and usually when a man wants to get out, why, you don't want the business.

Q. Do you recall whether or not you looked into the Varley Winding Machine?

A. Yes. That was a machine for winding coils for electric motors which we built for our starting and lighting business. Some friend of Mr. Durant's in Newark brought that to him.

We worked that out pretty well with the Remy Company down in Akron, one of General Motors' divisions, and I was not too positive, but I think we really took a license under the Varley machine.

Q. Do you recall whether or not you looked into the subject of storage batteries?

A. Yes, that was another one of Mr. Durant's ideas. The automobile industry bought storage batteries at \$10 a car, but when someone had to buy a replacement battery, it cost \$40 a car, \$40 for the battery.

He thought that was too much spread, and he had the idea that du Pont being in the lead and paint business, that the two might fit together. We turned that down.

[fols. 3230-3231] Q. At whose suggestion did you leave the du Pont Company and go to General Motors?

A. Mr. Durant's.

Q. When did he first speak to you about that?

A. He first spoke to me in May, 1919—no, 1920. No, 1919. I was with the Motor Development Section of the du Pont Company. It would be May, 1919.

Q. You went with General Motors in the fall of 1919?

A. That is right.

Q. Mr. Pratt, I will show you a document that has been marked for identification as General Motors Exhibit No. 195, which is a letter from Mr. R. R. M. Carpenter to Mr. Pierre du Pont, dated February 18, 1919.

As of that date had anyone spoken to you about going with General Motors?

A. No, sir.

Q. Did you know anything about this document?

A. I never knew anything about it until this case came up and it was called to my attention.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 195.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 195.)

[fol. 3232] By Mr. Hurd:

Q. Mr. Pratt, I believe you said Mr. Durant first spoke to you along in May of 1919?

A. In May, yes.

Q. Where did this conversation take place?

A. It took place in his office in New York.

Q. Was anyone else present?

A. Not that I know of.

Q. What was the substance of the conversation?

A. Well, I might explain that my agreement with Mr. Durant, when I went in the Motor Section of the Development Department, was that I would come to New York twice a month, and he would go over with me things that he would like for me to study, and I would report to him as to what progress I was making on the things I was studying.

I remember being up there and meeting him about the middle of May, and he said to me, "This isn't going to work, trying to have my development work done down in Wilmington, and I would like for you to make arrangements to come up here."

Well, I didn't want to come to New York because all my friends were in Wilmington. I had just built a new home down there. I told him that I hoped we could make the arrangement we had work because I didn't like to move.

Well, Mr. Durant was always very kind to me after that, but I could see that he had lost interest in cooperating in trying to do the work in Wilmington.

Q. Did he ask you to investigate any further subjects after that?

A. Practically nothing on his own. What happened; it got noised around that we were doing development work

for General Motors, and a lot of people that had something to patent or some new apparatus that they wanted to sell to General Motors would come down to see me.

[fol. 3233] They would be the things that I would take back to Mr. Durant and ask him whether he was interested. Well, once in awhile he would say you might work on this one, and after awhile he got to saying, well, you use your own judgment, work on the ones you think are all right.

Q. He didn't initiate projects for you after this?

A. After May, no.

Q. When did you next have a talk with him regarding going with General Motors?

A. That would be about the last of October, 1919.

Q. Where did this conversation take place?

A. It was in Mr. Durant's office in New York.

Q. Who was present?

A. No one, so far as I know, but Mr. Durant and myself.

Q. What was the subject of that conversation?

A. Well, I will have to go back a little bit. I had worked with the du Pont real estate man in acquiring property at Nashville, Tennessee for the smokeless powder plant that was to be built there.

When we went there, one of the things that took us to Nashville was because there was plenty of housing. That town had not been close to any war activity, and a lot of people had moved away and gone elsewhere to get work, and most of America was crowded, so that was one of the factors that decided us to go there.

When we went there and started our activities, the town had a real boom. I didn't know anything about it until later—in about July, 1919, the du Pont real estate man, Mr. Caulfield, came to me and said, "I have got an invitation for you and myself to go to Mexico from the governor of one of the states down there."

[fol. 3234]. And it came about this way. This governor's daughter had married an insurance man in Nashville, and this insurance man had been very much impressed about how Nashville boomed after Mr. Caulfield and myself located the plant there. He gave us all the credit. He did not give the United States Government or anybody else credit for the money that was spent there.

So he wanted us to come down to Mexico to see what we

could do for Mexico, and I told Mr. Caulfield I would go as soon as I could get a vacation.

Along in October, Mr. Durant, not giving me much to do, I figured I would take a vacation, and he and I went down there early in October, to Mexico.

There we were met at the border by this governor and his son-in-law who had gone down ahead of us, and they took us through Mexico and showed us the natural resources that needed money to develop, and they showed us the forests, and they showed us the sugar cane land and they showed us the grass land, and I did not see anything that interested me until we got down to the Pahuco River near Tampico.

At the time we arrived there, there was low tide, and this river was, at the estuary about three miles wide. On either side of it back about a hundred feet from high water, there was a line of oil wells as far as you could see. Then there was a space of three miles that there were no oil wells.

I asked the governor why that was, and he said it was because of the old Aztec law that Spaniards thought was good law and followed, that the state could not take away from the people the land that was covered with water, that the people could always have the right of access to the river for the purpose of fishing, bathing, and washing their [fol. 3235] clothes, and this land belonged to the state, therefore nobody could take the oil out.

Well, I pointed out to him that he was being misled, because the oil wells on either side were draining the oil from under the river and the state was sustaining a loss.

Well, it appealed to him very much, so he took us up to Mexico City and had us call upon Caranza who was then president of Mexico. The idea appealed to Caranza very much, and he offered us, Mr. Caulfield and myself—Mr. Caulfield was the principal—a franchise which enabled us to drill for oil on the land covered with water. The beautiful part was we did not have to do any exploration work. The other fellow found the oil, and we could go along and drill on the land where the wells were on either side.

When I went back, remembering this petroleum thing was one that Mr. Durant was interested in, I took a trip up to New York and told him what we were able to do, that there was a lot of land undeveloped down in Mexico,

and this land was covered with water, and they could not drill on it, and I was a party to a franchise that we hoped to get for the purpose of allowing us to drill on this land.

This agreement was worked out, and Caranza signed it, then we learned that his signature did not mean anything unless it was approved by the Senate, and the Senate did not meet until the following March, and this was in October.

So Mr. Caulfield stayed down there and got hold of an engineer and tried to find out how much developed land, oil developed land would be covered by the franchise, and plotted it out on maps.

Mr. Harris: If your Honor please, I do not want to interrupt. I find nothing that is material to the issues in the last ten minutes.

[fol. 3236] The Court: I am assuming that he is leading up to it.

By Mr. Hurd:

Q. You explained this to Mr. Durant?

A. Yes, I did.

Mr. Harris: I do not see the materiality of it, your Honor. I think counsel should state what the materiality is.

Mr. Hurd: This is a part of a conversation he had with Mr. Durant which resulted in his being invited to go to General Motors.

Mr. Harris: I think there is no dispute that he was invited to go to General Motors, and I do think we ought to shorten the record.

Mr. Hurd: There is a dispute as to why he went. The Government charges he was sent over there as a stooge of General Motors, and I think we will show there was no reason—

Mr. Harris: I submit there should be a limit to it.

The Court: I think counsel is about at the end of his exploration into oil.

Mr. Hurd: Yes.

By the Witness:

A. I told Mr. Durant about this, and he merely said, "Well, why are you fooling around with oil? I have got a wonderful job for you up here."

Well, I renewed my objection about coming to New York. He said, "I am going to be busy for the next hour." This was about eleven o'clock. "You come back here." I went back to see him, and when I came back he invited me out to lunch at Columbus Circle, New York, at Childs Restaurant, [fol. 3237] and he sold me on the idea that I should come to General Motors, that I had a great opportunity to come there as an assistant to him.

I told him that I would come, but that I would have to go back to Wilmington to talk to my wife, that she had something to say about it.

Q. Was there any discussion as to the nature of your work at General Motors?

A. He said he wanted me as a general assistant to him. He had one assistant at that time, and he told me that he had hired another one, a Mr. Wagner, and he said he would work out our duties.

Q. Purely as a matter of interest, did your franchise ever go through down there?

A. No. Mr. Caranza was assassinated before the Senate met, and the new president gave the franchise to the existing oil company.

Q. Then how long after this conversation with Mr. Durant was it before you started to work for him?

A. I started to work for him December 1, 1919.

Q. Now, what type of work did you do for Mr. Durant?

A. Well, he first had me travel with him to get acquainted with the plants. He told me he wanted me to get acquainted with the organization of General Motors, that he knew the general manager, but he did not know too well the fellows down below, and he wanted me to know the purchasing agent, the engineers, the works managers, and so on.

Q. Did you carry out those instructions?

A. It was one of my duties. He also had me sit in on the Executive Committee. I was not a member of the Executive Committee, but he wanted me to be informed.

A little later on, he organized the Appropriations Com-

mittee and made me the Chairman. His hope was to have us get some control on the appropriations.

[fol. 3238] Q. Did you investigate any potential businesses for him while you were working under him?

A. Yes, a lot of people were friends of Mr. Durant and wanted to become part of the General Motors' family. I remember I hadn't been there for two days, and I would have to investigate a screw machine plant up in the Bronx.

Soon after that he sent me to Toronto, Canada, to investigate an oil burner which was a new development at that time. I did not recommend the acquiring of either of them.

Q. Do you recall any other businesses that you investigated for Mr. Durant?

To refresh your recollection, was there a threshing machine plant investigated?

A. Yes, Mr. Durant was creating a farm implement plant, and he had a good idea that has been done now by combines, but he knew that farmers had to wait for a custom machine and quite often lost their wheat because it got wet and sprouted, so his idea was to have a small threshing machine so that every farmer could have his own.

There was a little outfit down at Doylestown, Pennsylvania, and Mr. Hardy and I went down there, and he bought that as part of the Samson Tractor.

Q. Did you recommend that he purchase the plant?

A. No, I was not very strong for it.

Q. Who was Mr. Hardy?

A. He was a gentleman that had been working with Mr. Durant since the horse and buggy days, since Durant was in the buggy business.

Q. Was that A. B. C. Hardy?

A. A. B. C. Hardy.

Q. You mentioned something about appropriations, I believe. What was that activity?

A. Well, no one knew just how much money had been appropriated, and there was no control of how much money [fol. 3239] was being spent. Mr. Durant, fortunately, was somewhat to blame for that himself. His Executive Committee consisted of the plant general managers, and when one of them had a project, why he would get the vote of his fellow members; if they would vote for his product, he would vote for theirs. It was sort of a horse trading.

In addition to that, if they didn't get enough money, Mr. Durant, when he visited the plant, would tell them to go on and spend what money they needed, without any record of it being made.

We found that during Mr. Durant's regime we were never able to get the thing under control.

Q. Was any committee formed to work on it?

A. I thought I mentioned that there was an Appropriations Committee consisting of Mr. Hardy, Mr. Warner and myself.

Q. Who was Mr. Warner?

A. That was Mr. Tom Warner. He was the man whom Mr. Durant bought the Muncie Products Company from.

Q. Did you have any connection with Frigidaire while you were working under Mr. Durant?

A. Yes, that was later on, about July. Mr. Durant——

Q. Of what year?

A. 1920.

Mr. Durant—I would spend the week end with Mr. Durant, and coming back on the train one Monday morning he told me the story of Frigidaire. It was the first time I had heard it.

He said it was purchased to have something that the car divisions could manufacture if they were stopped on the manufacture of automobiles, which at that time were considered a luxury; that the refrigerator could save food, and he thought it could be manufactured during the war [fol. 3240] and could be sold by the dealers and it would keep his dealers alive.

He bought it for that purpose. It had never been much of a success. The job hadn't been properly engineered nor properly manufactured, and he told me to go out to Detroit and liquidate it, that it was just losing money and taking money that was needed in the automobile industry.

Q. And did you do that?

A. I went to Detroit, and the problem that I saw at first was that they had sold about 200 in Detroit, and it was the service problem.

If you liquidated, somebody had to take care of those machines, or General Motors would have a black eye from the service standpoint.

So I got in touch with the service manager and talked to him on the problem, and he was very much chagrined to think that there was any thought of liquidating Frigidaire, and he persuaded me to go out and call on a number of the Frigidaire owners, because he said, notwithstanding all the trouble they had had, that they were all very loyal to it, and I found that to be the case, that women said they would rather give up anything they had in the kitchen than the Frigidaire, because it kept the dirty ice pan out of the kitchen.

They sold me on it, and I came back and told Mr. Durant. I told him I thought anything that had that much appeal would make a good business if you had a really good job.

He said, "If you think that way, we won't close it up." He said, "It is your responsibility."

And it was my responsibility for about eighteen years.

Q. Now, did you participate in any efforts to control inventories while Mr. Durant was president of General [fol. 3241] Motors?

A. Yes, that was getting along later in the year. I think it was in October that Mr. Durant wanted an inventory committee.

Q. Who was on that committee?

A. Well, there was Mr. E. F. Johnson and Mr. Barton and myself.

Q. Who was Mr. E. F. Johnson?

A. Mr. E. F. Johnson was a former du Pont man, who had been hired by Mr. Chrysler.

Q. Who was Mr. Barton?

A. Mr. Barton was an old man, head of the mechanical staff of General Motors, who had been there quite a number of years.

Q. What was the inventory condition in General Motors at this time?

A. Well, they had been running on expanding business for about two years, and everybody was afraid there was not enough material to go around, and they tried to protect themselves by taking more material than they could fabricate, and also making heavier commitments than they could ever use. The condition was very bad, and by October we had too many finished cars in inventory.

The demand for cars had started to slacken up in mid-

summer, and we had cars that had been shipped to dealers all through the Midwest, and we had to take them back into our own inventory and store them.

Q. What, if anything, did this Inventory Committee do?

A. Well, we would give them almost powers of receivership. We could tell the divisions—our job was to examine into their inventories and if they had, in our judgment, excessive inventories, they couldn't buy any more material, take any more material in on their commitments until they had reduced that inventory to the amount we worked out with the divisions as a fair amount.

We also had control of their payrolls—that is, on productive labor—and the changing of material into cars or [fol. 3242] parts of cars. The labor had increased the inventory, so we would keep the raw material until we could use it. What we were trying to do, the corporation was running short of cash, and we were trying to preserve the cash.

Q. Where was your office with respect to Mr. Durant's office?

A. My office was up on the same floor as Mr. Durant, on the diagonal corner of the building.

Q. To what extent did you have contacts with him during the last part of 1919, and through October of 1920?

A. Oh, I had frequent contacts with him. Quite often he would want some special job done, and he would send for me, and we would talk it over, and try to find out what he wanted done, and try to do it.

Quite often he would call me and have me in the evening to work on something he had in mind.

Q. Mr. Pratt, I would like to have you give us a brief description of General Motors as it existed under Mr. Durant, from an organizational standpoint.

A. Well, Mr. Durant had no one between him and the general managers of the larger divisions. Mr. Sloan was between him and the managers of the accessory divisions, but the car divisions, Mr. Durant insisted on dealing direct with them. He had brought Mr. Chrysler in about a year before to be sort of a general manager, but he and Mr. Chrysler could never agree on the division of the responsibility, because Mr. Durant didn't want to give up the direct dealings with the general managers. That was one

of his faults, I think, was that he wanted to deal with everyone.

I suppose he had forty or fifty individuals who could go direct to him for decisions.

Q. During Mr. Durant's presidency, while you were [fol. 3243] there, to what extent, if any, was there a correlation of activities between the various divisions?

A. There was no correlation. Maybe there had been a little bit at one time in the purchasing, but that had about died out, I think, during Mr. Nash's administration of General Motors, before Mr. Durant got back to General Motors. He had set up sort of a correlation committee there, but there was nothing I could say practically in the way of correlation.

Q. To what extent was there a research activity in General Motors under Mr. Durant while you were there?

A. Well, there was practically none. Mr. Kettering's company had been purchased during 1920—1919 or 1920, I don't know exactly, but it never had gotten to function.

Mr. Durant, unfortunately, would have more impractical men—he would like the men that would come up as some of the automobile men had by working in the shop, and really producing something with their own hands. They had done it by gut and try, and some of them did a very good job; a lot of them didn't.

Q. Did the divisions themselves have research departments at that time?

A. No. At that time there were very few research outfits.

Q. You refer to some of the division men. Do you recall who the division manager was of Cadillac under Mr. Durant?

A. That was Mr. Collins.

Q. Where did he come from, do you know?

A. Mr. Collins had been with Buick as sales manager, and previous to that he had been in the buggy business—no, in the farm implement business. The farm implement companies usually sold to the same dealers as the buggy companies, and Durant met him through that channel.

[fol. 3244] Q. Who was the head of GMC Truck?

A. That was Mr. Day.

Q. Where did he come from?

A. He came direct from the farm implement field.

Q. And who was the head of Oakland?

A. Mr. Fred Warner.

Q. You referred to him before?

A. No, that was Tom Warner. There were two different ones.

Q. Where did Mr. Fred Warner come from?

A. I think Mr. Fred Warner had been a buggy salesman, and worked for Mr. Durant.

Q. Who was the head of the Chevrolet?

A. Mr. Fred Hohensee. Mr. Hohensee was a great driving force, but he had no technical education. His great forte, I would say, was his ability to get work done, but he didn't care too much how well it was done.

Q. To what extent was he close to Durant?

A. Well, he was very close to Durant. He would do anything Mr. Durant told him, and never question it.

Q. Who was the head of Samson?

A. That was Mr. J. A. Craig.

Q. Where did he come from?

A. Mr. Craig came from Janesville. He had owned a small implement plant at Janesville, which Mr. Durant had bought to make the nucleus of the Samson Tractor Works.

Q. Who was the head of Buick?

A. Mr. Harry Bassett.

Q. What was his origin?

A. Well, he had been in the parts business. He came up with Mr. Mott, from the Mott Company. They were manufacturers of axles, independent manufacturers of axles, but Buick had bought the company out, and Mr. Bassett moved up as assistant manager to Mr. Chrysler, and later [fol. 3245] when Mr. Chrysler left, he became general manager.

The Court. The Court stands recessed for fifteen minutes.

(A short recess was here had.)

Mr. Hurd:

Q. Mr. Pratt, I would like to show you General Motors Exhibit No. 1, which is an organization study of the General Motors Corporation with an attached organization

chart. Did you have any contact with this document while you were working under Mr. Durant?

A. Yes, Mr. Hurd. This is the report that Mr. Sloan made, and I think I saw it early in October, 1920.

Q. What were the circumstances of your seeing it?

A. Well, Mr. Sloan talked to me about it, and he asked me if I would like to take it in to Mr. Durant's office for him, and I did. Mr. Durant glanced at it, and he said it would take some time, and so far as I know, that was the end of it.

Q. Did anything ever come of it so far as you know, Mr. Pratt, while Mr. Durant was there?

A. No.

Q. Mr. Pratt, did you ever have any contact with Mr. Durant in connection with any stock market operations?

A. Yes, there was one occasion that I remember. I would say it was the latter part of February.

Q. Of what year?

A. Of 1920. He asked me what I was doing one evening, and I said nothing. He asked me would I come down and help him at the office for awhile. When I got down there, why, he told me to get a large sheet of paper, and directed me to divide it up into three broad columns and label them A, B, and C, then draw another line under the A, B, [fol. 3246] and C, leaving room for the name, address, and number of shares. He had the stockholders' list.

Q. Of what company?

A. Of the General Motors Corporation. He told me that he would go over the list, and call out names and addresses and the number of shares, and told me where to place them, under A, B, or C, which he did. It took us quite a little while, and I handed the sheet to him. He glanced over it, and added up the number of shares, and then rang for his secretary, Mr. Murphy. He told Mr. Murphy to send out telegrams. I cannot remember the exact wording, but something on this basis that those who were listed under "A", "there will be something happening in our stock, don't sell yours until you get in touch with me."

And under "B" he said:

"Things look very favorable to our stock. Buy all you can afford."

And under "C," he asked those people under "C" for an option on their General Motors stock at the market.

Q. At about this time, do you recall whether or not there was any change being made in the General Motors stock?

A. They were issuing ten shares of new stock of par value ten for the old stock of par value one hundred; for one share of the old stock, they were issuing ten shares of the new.

Q. Now, to which of these stock issues did these telegrams refer, the old or the new?

A. Well, the telegram did not say, as I remember it, at all.

Q. Do you recall whether the new had been issued at that time?

A. I don't think so.

Q. Now, a few weeks subsequent to this, do you recall what happened to the General Motors stock on the market?

A. Yes. The old stock became very active, and it [fol. 3247-3252] advanced as much as thirty or forty points a day, sometimes, I think. It would go up twenty-five or thirty points and go back ten or fifteen, but the whole trend was a very rapid advance.

Q. How long did that continue, Mr. Pratt?

A. I would say three or four weeks. I don't know exactly.

Q. What happened then?

A. Well, there was talk of a corner having been created on the old stock, and that was taken up in the Stock Exchange, the New York Stock Exchange, and they ruled that the new stock would be a good delivery on the old stock.

Q. What happened to the market after that?

A. The market went down.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibits Nos. 195-A and 195-B.

(Said documents, so offered and received in evidence, were marked General Motors Exhibits Nos 195-A and 195-B.)

[fol. 3253] By Mr. Hurd:

Q. Mr. Pratt, did you ever have any discussion with Mr. Durant regarding his attitude towards short sales on the market?

A. Yes, I have heard him remark a number of times that he thought there should be a law against short selling. He didn't think it was right for anyone to sell something that they didn't have, and appreciate the other fellow's problem.

Q. Later on, in 1920, did you have any further contact with the matter covered by these telegrams that you referred to earlier?

A. Yes, in a small way. I think it was—pretty hard for me to fix a date. I think it was in early October.

Q. 1920?

A. 1920. I was in Mr. Durant's office. I remember on three different occasions I was there, and the gentleman would be announced, and when the man came I would get [fol. 3254] up to go and Mr. Durant would tell me, "Sit still, John, I want you to hear this."

Q. Do you remember the names of any of these three men?

A. Yes, I remember, I think, two; one was a man by the name of Smith who lived either in Saginaw or Bay City, and the other was a man by the name of Black, and I don't know whether he lived in Bay City—I mean in Saginaw, or Flint. They were old friends of Mr. Durant's.

The reason I place them was that he sat and talked about having bought a plant from them at one time, which was then part of Chevrolet's plant.

Q. Was anyone else present, besides you and Mr. Durant, and Mr. Smith or Mr. Black, or the other gentleman?

A. No, no one else.

Q. Well, what was the conversation?

A. Well, the gentleman came in and said, "Mr. Durant, do you remember back in February you advised us to buy General Motors stock, and we bought. The stock has gone down, and now we are facing ruin."

I remember in one case Mr. Durant—I believe it was the case of Mr. Smith—and Mr. Durant said, "How much did you buy?" and Mr. Smith told him, and he said, "Could you afford to buy that much?"

Well, Mr. Smith said, "It proved that I couldn't."

He said, "Well, that is all right. Who is your broker?"

And he said, "I will take the stock over from your broker, if you want me to do it."

Mr. Smith told him the name of the broker, and he was

gotten on the phone, and Mr. Smith got on the phone and said that Mr. Durant was going to take over his holdings [fol. 3255] in the brokerage office, and then Mr. Durant would get on the phone and confirm it.

I saw that in three different instances.

Q. In all of these three cases Mr. Durant took over the—

A. Took over the stock. I was informed afterwards by Mr. Zimmerschied who was an assistant to Mr. Durant—when we talked about things Mr. Durant told us that seemed to be private I never told Mr. Zimmerschied, and he never told me, until after Mr. Durant had left—that one of them was Mr. Robert Smith, and that on several occasions that had happened.

Q. Did Mr. Durant have any discussions with you regarding his leaving General Motors, before he left?

A. No, I never knew that Mr. Durant was leaving until about, I think the day before he left, two days before he left.

Q. And did you have a conversation with him?

A. I had no conversation with him, but he invited quite a number of us to his house for dinner on the night of the 30th of November, 1920.

Q. Do you recall who was there?

A. Well, I can recall a number. I don't know that I can recall everybody. There may have been some there that I don't remember. But I do know that Mr. Collins was there; Mr. Bassett was there; Mr. Day was there; Mr. Fred Warner and Mr. Tom Warner were there; Mr. Hohensee; Mr. Zimmerschied; Mr. Hardy; and myself.

There may have been others, but I know they were there.

Q. Were any of the du Ponts present?

A. None of the du Ponts.

Q. Was Mr. Sloan there?

A. No.

Q. What happened on this occasion?

[fol. 3256] A. Well, we had a nice dinner. After we were through dinner, Mr. Durant got up and told the boys—he called them “his boys”—that he wanted to tell them directly what had happened to him.

He said, “I was trying to support General Motors stock in the market, and I became over-extended.”

He said, “I am telling you this because you will hear

rumors that the du Pont Company took advantage of me and forced me out, and you will find possibly some people will show resentment in General Motors because I am out. But I want you to know that the du Pont Company treated me as fine as anybody could treat me."

He said, "If they hadn't gone out and borrowed money to the extent," I think he said, "of \$35,000,000.00 to take over the brokerage holdings, General Motors stock would have gone to practically nothing. I would have been broke and you boys who have your money in General Motors would have been broke."

He said, "I don't want any resentment toward the du Pont people because I am getting out. I want you to remain with General Motors and support the du Pont people. Mr. P. S. du Pont is coming in as president, and I want you to support him just like you did me."

That is about all I remember, but that was the tenor of his address.

Q. Do you recall whether he said anything about his future?

A. Well, yes. He said, as I remember it, that he was 60 years old, and in the settlement it left him about \$6,000,000.00, and that was enough for a man 60 years old; that he and his wife were going to enjoy life; that he had worked hard all his life.

Q. Did he say anything about whether or not he was [fol. 3257] going back in the motor industry?

A. He told us he was through with the automobile industry.

Q. Mr. Pratt, to what extent, if any, did this talk that Mr. Durant gave that night influence your subsequent activities in General Motors?

A. Well, I think it had considerable influence on me, and my dealings with the du Pont Company. I sensed—I couldn't put my finger on it—but I did sense there were at times a certain amount of resentment toward the du Pont Company. People down the line hadn't heard Mr. Durant talk, and the boys hadn't gone back and told them what Mr. Durant said. I tried to smooth those things out at times.

For a number of years it had quite an effect on me in my relationship to the du Pont Company.

Q. Did you have any discussions with Mr. Durant subsequent to this dinner regarding his future activities?

A. Yes, sir. I think it was in February, 1921. I was in Detroit then, and Mr. Durant came to my office and told me that he found he was wrong when he said he was getting out of the automobile industry; he was too deeply wed to it. He couldn't get out of it.

He had made up his mind to just build a real good little car and call it the "Durant." He had named the car for himself, and this was going to be a good car. He was going to limit his production to 50,000 automobiles a year.

His trouble had been that he expanded too far, and he couldn't look after the business. But he thought he could manage a production of 50,000 a year.

He asked me to go with him, but I was deeply interested then in the job I was doing. With the two other men, we were practically the receivers of General Motors from the standpoint of the work we were doing. It was very interesting and I thought very constructive. I thought it was the most constructive job I ever had in my life, to get General Motors or help get General Motors on a sound operating basis from an inventory standpoint.

Q. Did you go with him?

A. No, I did not.

Q. Did he go ahead with his project?

A. Yes, and he never held it against me that I didn't go. He and I were friends up to a few years before his death. I didn't see him for a few years before he died.

Q. Did he confine this new company to just the limited operation?

A. No, he just repeated the same things he had done before. He got the Durant going well, then he started the Star. That was to compete with Ford and Chevrolet and Plymouth.

Later on he started another new car, the Flint. For a while it seemed he had a great success. He was able to sell a lot of stock, built a lot of plants, sold a lot of cars.

He was fairly successful until the next depression came along, and he was over extended again, and at that time he went out of the automobile industry and his cars all went out of business, too.

Q. After Mr. Pierre du Pont became president, do you recall what the first thing was that he did?

A. Yes, I think the first day he called together all the general managers. They had all been there the night before to attend Mr. Durant's dinner, and he called a good many of the staff in, and had a general talk about what ought to be done for General Motors.

Q. Mr. Pratt, I will show you a document marked General Motors Exhibit 196 for identification, which purports [fol. 3259] to be the minutes of a meeting between the president and plant managers of General Motors held on December 1, 1920.

Was this the meeting to which you have referred?

A. That is the meeting, yes, sir.

Q. Referring to the first page, reference to "Inventories Committee," do you recall what the problem was with reference to that?

A. Well, yes. There were only three of us on the Inventories Committee previous to this, and we had to work with the treasurer of General Motors because none of the divisions—I shouldn't say none of them, but divisions like Oakland and Olds, their outgo of cash was greater than their income of cash, and they had to call on the treasurer of General Motors for money.

So it was decided that the treasurer would be put on the committee so he would know first-hand what the situation was. The controller was put on the committee, that is, the controller of General Motors, so that he could see the problem there that General Motors faced, and see whether he could help to work out controls that would prevent the same thing happening again.

Q. The next item on this document is, "Future Sales." Do you recall what that problem was?

A. Of course, that was about the only way we could get rid of inventories, that was by selling the product. As I remember it, we had considerable carry-over of cars that had been manufactured in 1920, that were in storage, and the Executive Committee wanted to be advised as to the movement of those cars.

Q. The next item is "Future Commitments for Materials"; what was that problem?

A. Well, in the situation that we had there—it came to

a head in October, I think—we found that the divisions, [fol. 3260] back in the spring of 1920, when they thought there was going to be a great shortage of material, had gone out and contracted for excess materials in order to protect what they thought their production was going to be.

That refers to a better understanding of the problem.

Q. At the bottom of page 3 in reference to "Inventories Schedule." To what does that refer?

A. Oh, yes, I was talking about that last time. You were talking about Future Commitments for Materials. I guess. That is right.

Well, each division under the Inventories Committee had made a schedule of their inventories. Some of the division managers felt that the Inventories Committee was tying them down too tight and didn't let them buy enough. It came up for discussion, and they asked for a study, and, if necessary, reallocation of inventories.

Q. On the next page is a reference to having new products checked by Mr. Kettering. Up to this time had there been any coordination between Mr. Kettering's research and General Motors products?

A. No, Mr. Kettering was just getting organized, really, down in Dayton to serve General Motors.

Q. On the next page, there is reference to the production of Sheridan cars. What was the problem with respect to Sheridan cars?

A. The Sheridan car was a new car. It hadn't been in the General Motors line previously. It had been designed by Mr. Burke, who was the general manager of it, and was to be manufactured at Muncie, Indiana.

There was the question whether General Motors needed additional cars in its line. A lot of the cars were competing with each other in General Motors.

Q. What did become of the Sheridan car?

A. It was liquidated.

[fol. 3261] Q. I won't go into the other portions of the document, but will you state whether or not you considered that this dealt with the emergency problems in General Motors as of that date?

A. Yes.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 196.

(Said document so offered and received in evidence, was marked General Motors Exhibit No. 196.)

By Mr. Hurd:

Q. Now Mr. Pratt, I show you Government's Exhibit No. 178, which is a document relating to General Motors organization with a chart attached.

Will you look at that and tell us whether or not that is substantially the type of organization that Mr. Sloan had submitted to Durant?

A. Yes, this is practically the same thing. There were some changes. Mr. du Pont was president rather than Mr. Durant. But this is the form of organization chart that Mr. Sloan had prepared the previous fall.

Q. Do you recall this being adopted shortly after Mr. Pierre became president?

A. Yes.

Q. What happened to your Inventories Committee, Mr. Pratt?

A. Our Inventories Committee continued to function, I think, through April, or maybe May, 1921. By that time, I think April and May businesses began to pick up, and we were able to convert a good deal of inventory into product and sell it.

In the meantime there had been controls worked out, what they call the "ten day reports," and it was recognized that if those controls worked, the Inventories Committee would not be necessary.

So the Finance Committee adopted the controls that had been worked out, and the Inventories Committee was discharged.

Q. You have referred to the Sheridan car project being liquidated. Were there any other divisions liquidated in this early period that you recall?

A. Yes, the Samson Tractor was started on liquidation quite soon. I would say in the early spring of 1921.

Scripps-Booth was a car division that had just been purchased a couple of years before, I think back in 1918 or 1919. That was liquidated maybe in 1923 or 1924, but it was in the general trend of liquidation.

Q. Do you recall whose project the Samson Tractor had been?

A. That was Mr. Durant's.

Q. What about the Sheridan car?

A. I couldn't say positively that Mr. Durant originated that. He was back of it and took a great interest in supporting it.

Q. What about Scripps-Booth operation?

A. Well, that happened before I came in the picture. I wouldn't know how it came about.

Q. During the early period, the first year after Mr. Pierre du Pont became president, do you recall what, if any, changes were made in the division managers?

A. Yes, Mr. Durant, of course, had been president and general manager of Chevrolet. He had Mr. Hohensee as Works Engineer—Works Manager, I guess it was, not engineer.

When Mr. Durant left, or soon after Mr. Durant left, I would say about the 1st of February, Mr. Hohensee retired.

Mr. du Pont had become president of Chevrolet, and he [fol. 326] made Mr. Zimmerchied General Manager of Chevrolet. Mr. Zimmerchied had been an assistant to Mr. Durant.

Q. Did Mr. Zimmerchied make any changes in the Chevrolet organization?

A. Yes. He made some of the most constructive moves that were made in General Motors. He recognized what the weakness in Chevrolet was. It was lack of good engineering and poor manufacture.

He went out and hired Mr. O. E. Hunt, who was with, or formerly engineer with Packard. I don't know whether he had left Packard or not. Mr. Hunt became chief engineer of Chevrolet, worked on up and retired a couple of years ago after becoming director of engineering in General Motors.

Also Mr. K. T. Keller had been brought down to Detroit from Buick by Mr. Chrysler. Mr. Chrysler was trying to come in and take over the operating management of the car divisions in General Motors, and he had brought Mr. Keller from Flint as his assistant. Mr. Keller was one of the outstanding men who stuck for quality, and Mr. Zimmerchied persuaded him to come to Chevrolet in charge of manufacture.

Q. Is that the Keller who was subsequently president of Chrysler Corporation?

A. Yes. He is chairman of the board now.

Q. Was there any change in the Chevrolet product after these changes?

A. Oh, there were great changes. In a very few months you noticed the change.

Q. What was the change?

A. Well, I couldn't tell you the detail, but I would say they tightened up the nuts and got the thing to really stick together.

Q. Do you recall any other changes in the management of the divisions that occurred in the early days?

A. Yes. A little later—I am not good on dates like Mr. [fol. 3264] Sloan is, so don't expect me to remember the dates—but oh, I would say in a matter of months, Mr. Collins was relieved of the general management of Cadillac and Mr. VerLinden relieved of the general managership of Olds.

Mr. H. H. Rice was made general manager of Cadillac and Mr. A. B. C. Hardy, who had been with Mr. Durant a great many years, was made general manager of Olds.

Q. As far as you know, had any of these men ever been connected in any way with the du Pont Company?

A. None of them. I answered that pretty quick. Mr. Rice may have been, but I doubt it. I don't think he was, but I don't know positively that he was not. But I know the others weren't.

Q. After your Inventories Committee had completed its work, which you said was about three months, I believe, in 1920, what did you do?

A. Then I began to try to help Mr. Sloan some by taking over some of his duties in the accessory division. I don't think they were assigned to me for quite some time after that, but for all practical purposes I carried on the duties that he had previously carried on in the accessory division.

Q. Do you recall in late 1922 you became vice-president in charge of the accessories group?

A. Somewhere along that time.

Q. Prior to that time had you conducted that work?

A. Yes.

[fol. 3265] JOHN LEE PRATT, a witness on behalf of the Defendants, having been previously duly sworn, resumed the stand, and testified further as follows:—

Direct examination (Continued).

By Mr. Hurd:

Q. Mr. Pratt, were you a member of the General Purchasing Committee of General Motors Corporation?

A. Yes, sir.

Q. During what period?

A. Oh, I think from the time it was organized until about 1929.

Q. Did you act as Chairman of the committee during part of that period?

A. Yes, when Mr. Sloan retired, I was Chairman, I guess, in 1926 or 1924.

Q. 1924, I believe.

A. 1924 to 1929.

Q. And you remained Chairman until about 1929?

A. That is my recollection.

Q. Are you a member of the Board of Directors of General Motors?

A. Yes, sir.

Q. When did you go on the Board, if you recall?

A. I went on the Board in 1923.

Q. Have you been a member of the Board ever since that time?

A. Yes, sir.

[fol. 3266] Q. From whom did you hear of your election to the Board of General Motors?

A. Mr. Harry Bassett.

Q. Did you have any discussion with any of the du Pont representatives before you went on the Board?

A. No, sir, I did not know I was going on the Board until Mr. Bassett told me.

Q. Were you a member of the Executive Committee of General Motors?

A. Yes, a few months after I went on the Board, I was put on the Executive Committee. I do not have the dates in my mind.

Q. How long did you remain on the committee?

A. I remained on the Executive Committee until in 1935. I think the records show I was there later, but what happened was the boys did not think I was going to make a successful retirement and they gave me a leave of absence. They didn't pay me anything on my leave.

Q. Were you a member of the Financial Policy Committee?

A. The Financial Policy Committee, yes.

Q. That was formed in 1946?

A. I was on it from 1946 until December, 1951.

Q. Were you ever on the Finance Committee of General Motors?

A. I was never on the Finance Committee.

Q. Or on the Policy Committee of General Motors?

A. Not on the Policy Committee.

Q. Or on the Operations Policy Committee?

A. No.

Q. Referring briefly again to your work as the man in charge of the accessory group, will you tell us in general what divisions that covered?

A. Well, it covered—if I would start east and go west, I think I would get it better. It was New Departure, Hyatt, Harrison Radiator, Brown-Lipe-Chapin, Harrison Radiator, Dayton Engineering, Delco Light, Frigidaire, Inland [fol. 3267] Manufacturing Company, Remy, Jackson Rim. I guess that is about it.

Q. When you took charge of these accessory divisions, did you make any changes with reference to the closing down any of the divisions or combining any of the divisions?

A. Well, over a period of years, that was a constant thing. I left out Klaxton Horn in there. That was one of the first ones we combined. We combined Klaxton Horn with Remy, then we later combined Dayton Engineering, and the starting and lighting business with Remy, then a few years later, we divided Remy up into three companies, Remy, Guide Lamp and Delco Products. There was a constant change of things as the business changed. We liquidated Steel Products along about 1925 or 1926, and later we liquidated Jackson Rim.

Q. You say "we" did those things. Whom do you mean?

A. Well, I mean General Motors. I was the one that was directing it.

Q. It was done under your supervision?

A. Yes.

Q. Whose decision was it to make those changes?

A. Well, I guess I made the final decision. The manager sometimes would come up about a consolidation trouble and we would look into it and we usually had good managers, and I would usually approve what they suggested.

Q. Did you make any change in the managership of those divisions pretty soon after you took charge of them?

A. Yes. The change was made quite often, because Mr. Sloan knew the boys in the accessory divisions, and when he had a big job he wanted to do in the car divisions, he reached down in the accessory divisions and got them, and I had to find somebody else. He took Mr. Cotha away from Hyatt, and I hired Mr. Forsythe.

[fol. 3268] Q. Where had Forsythe been?

A. Mr. Forsythe had been with the du Pont Company. He was manager of their machine shop. He was a practical fellow who had come up through the ranks as a machinist, and one of the fellows that I knew could do a good job, and we needed a fellow like that.

Q. Was he recommended to you by someone in the du Pont Company?

A. No, sir, I picked him out myself.

Q. What other changes did you make, if any?

A. Well, at the ... a Horn there was a man by the name of McConnell, general manager there, when I took over. Mr. Sloan had a man by the name of Mr. Sweet. We put Mr. Sweet in with the combined Klaxton and Remy, and did away with the other job very early in the picture, and Mr. Sloan reached into the Remy and got Mr. Mooney, who was a general manager, and made him general manager of the General Motors Export Company, and a year or two afterwards he reached in and got Mr. Reuter who had been made General Manager, and put him at the head of Olds because Mr. Hardy retired after being there for years.

Mr. Reuter was preceded by Mr. Wilson, who was quite a young fellow there, about thirty-one or thirty-two.

Q. Who picked Mr. Wilson?

A. Mr. Wilson was already in the plant, but I took him as general manager.

Q. Is that Mr. C. E. Wilson who later became president of General Motors?

A. Yes, sir.

Q. Did you make any change in the Delco Light?

A. Yes. We had Mr. R. H. Grant as president of Delco Light. Mr. Sloan took him and made him general sales manager of Chevrolet, and he made Mr. Biechler, who was sales manager of Delco Light, the general manager of Delco Light.

[fol. 3269] Q. Had Mr. Biechler been connected with the du Pont Company?

A. No, sir.

Q. Had Mr. Wilson been connected with the du Pont Company?

A. No, sir.

Q. Mr. Pratt, I would like to turn briefly now to the subject of the General Purchasing Committee.

Did you have anything to do with the original formation of that Committee?

A. No, that was Mr. Sloan's idea.

Q. Did you discuss it with Mr. Sloan before it was created?

A. Yes, we used to discuss things of that kind in riding back and forth on the train from Detroit. We made the trip there every week.

Q. What was your position?

A. I was in favor of the committee.

Q. What did you consider to be the purpose or purposes of the General Purchasing Committee?

A. The first thing I looked for was standardization on supplies that the various divisions used so that they could buy in greater volume than we were buying.

I also looked for coordination of our purchases. Where a material was used by more than one division, I looked for a general contract, that is, a General Motors contract to cover at least a part of the purchases of that material.

Q. Were you in favor of centralized purchasing?

A. No, sir. The strong thing that General Motors had was decentralization, and I always fought for that.

Q. Mr. Pratt, we have some exhibits in this case that show that the General Purchasing Committee entered into a good many so-called quantity discount contracts or sliding scale quantity discount contracts.

[fol. 3270] Do you recall these contracts?

A. Yes, sir.

Q. Do you recall who initiated the idea of the General Purchasing Committee entering into such contracts?

A. I think it was Mr. Lynah, the Executive Secretary.

Q. And the exhibits also show that there were a number of so-called multiple item contracts, contracts that would cover various products made by a particular supplier.

Do you recall who originated the idea of the multiple item contracts?

A. I believe that was Mr. Lynah also.

Q. Do you recall that the Purchasing Committee dealt with the subject of whether there should be one or more suppliers for a particular product?

A. Yes, sir.

Q. What was the position taken by the committee on that subject, just briefly and generally?

A. Well, I think the position was that we should have more than one supplier where it was possible, and that we should give a larger part of the volume, not in excess of 80 per cent to one supplier, and give the remainder, not less than 20 per cent, to a second supplier.

We didn't believe in splitting it. Steel you can split up in a good many companies, but a lot of the stuff we didn't want too many suppliers on.

Q. Do you recall who originated this idea of having more than one supplier?

A. Well, I don't know. I know I was for it myself, and Mr. Knudsen was very strong for it. Mr. Sloan I don't think was too strong for it at times.

Q. Do you know what the basis for it was, of Mr. Knudsen's position on that?

A. Mr. Knudsen's was based on his experience at Ford. He had been manager of all Ford's assembly plants before he came to General Motors.

Q. What, if anything, do you consider that the General [fols. 3271-3281] Purchasing Committee accomplished?

A. Yes, they did a great deal of good work in standardization of supplies. They also got a better spirit, cooperative spirit, among the purchasing agents of the various divisions by working together through a committee, and they got to know each other better.

Q. While you were chairman of the committee, to what extent were you active in the participation of the activities of the committee?

A. No, I was not. I was sort of an umpire. I tried to express what I thought was a General Motors' policy on things that came up.

[fol. 3282] By Mr. Hurd:

Q. Mr. Pratt, I now wish to turn to the subject of reciprocity.

Do you recall the subject of reciprocity coming before the General Purchasing Committee?

A. Yes, sir.

Q. Do you recall the action that that committee took?

A. Yes, sir, they took the position that the General Motors business—we could not benefit much by reciprocity due to the fact that our purchases were in large volume and our sales were in small volume, in dollars per car. That would be letting reciprocity influence us on a great many dollars, and we could not benefit from reciprocity only on a very few dollars.

Q. I want to call your attention to Government's Trial Exhibit 537, which sets forth the resolution of the General Purchasing Committee adopted on September 5, 1924.

Is that the action taken by the Committee that you recall, to which you are referring?

A. No, I refer more to the advantage of reciprocity in General Motors. It seems to have been reciprocity by du [fol. 3283] Pont based on the volume of business with General Motors.

Q. Do you recall the subject that is referred to in Government's Exhibit No. 537 coming before the Committee?

A. Yes.

Q. Does that set forth the action, do you recall, that was taken?

A. That is correct.

Q. Now, what was your personal attitude towards the subject of reciprocity?

A. Well, I did not have any ironbound rule. We could never make an ironbound rule in General Motors, but in general, we could not recognize the principle of reciprocity for the reason that I stated before that our purchases were in large volume and our sales in small volume.

Q. Now, I want you to look at Government's Exhibits 527 and 528. 527 is a letter from you to Mr. R. R. M. Carpenter, dated April 13, 1923, in which you state:

"It has recently come to our attention that a number of the automobile companies outside of General Motors Corporation are looking on their purchases from the various General Motors Accessory Divisions and from the du Pont Company as purchases from one interest."

Do you recall this particular incident?

A. Yes, I recall that.

Q. And yet, in this letter, you inquire as to whether Mr. Carpenter can obtain any information as to their business with the automobile field?

A. Yes.

Q. And Government's Exhibit No. 528 is the answer which you received to this inquiry?

A. Yes, sir, that is the answer by Mr. F. B. Davis, Jr., who was the assistant general manager.

[fol. 3284] Q. Tell us how this subject came up, and what happened to it?

A. Some of the accessory division managers called my attention to the fact that they were being told about the du Pont volume, and that it ought to be lumped together, and they get reciprocity. I was interested to know what the volume of business was that they were talking about, and that is the reason I wrote to Mr. Carpenter and asked him would he send me that information. He sent it to me, and I found that it was nothing to really think about. I think the Ford Motor Company was just \$135,000.00, but we had very little business with Ford. We had no business—Ford never asked us about any reciprocity, so far as I know. I never heard of any such thing in the Ford Company.

Q. Did you do anything further?

A. We did nothing about it, just received that information.

Q. Now, that was in 1923. It was in 1924 that this resolution was adopted by the General Purchasing Committee. Do you recall whether the subject of reciprocity again came up before the General Purchasing Committee?

A. I think it came up several times by people wanting to consider reciprocity.

Q. I show you General Motors Exhibit No. 199, for identification, which is the minutes of General Purchasing Committee September 30, 1926, also August 16, 1927.

The first item refers to General Motors Truck Division. Do you recall what that incident was?

A. Yes, the General Motors Truck had an opportunity sometimes to make sales based on reciprocity, and they were anxious to get General Motors' purchases, and I requested the Purchasing Committee to make up such a list and let us take a look at it to see what it meant. I think once in a [fol. 3285] great while we let General Motors Truck practice reciprocity if it was to their benefit.

Q. Was that tied up in any way with the du Pont Company?

A. None whatever.

Q. And when you look at the second item, the August '27 minutes purport to refer to Mr. E. N. Johnson. Do you recall that incident?

A. Yes, Mr. E. N. Johnson had been manager of our Lancaster Products which we liquidated, and when he was with Lancaster he was a great believer in reciprocity in General Motors.

I gave him a job to make a study to find out whether or not General Motors had been penalized by not using reciprocity, and this was a report on that.

Q. Subsequent to that did the Purchasing Committee ever go into the practice of reciprocity?

A. No, the Purchasing Committee never practiced reciprocity.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit No. 199 which is the excerpts from the 1926 and 1927 minutes.

(Said document so offered and received in evidence was marked General Motors Exhibit No. 199.)

By Mr. Hurd:

Q. After that resolution was adopted in 1924 relating to the du Pont Company, do you recall that at that time the Resolution Committee turned it down except the communications might come from the president of the du Pont to the president of the General Motors?

A. That is right.

Q. Subsequent to that did you receive any requests from [fol. 3286] the people in the du Pont Company for information to enable them to practice reciprocity?

A. Yes.

Q. And in general were those requests from the top management of du Pont?

A. No, they were usually from young fellows that were just trying to make a place for themselves in du Pont.

Q. Generally what did you do with those requests?

A. Well, if it was one I thought that we could help them on, I would try to help them, if I could help them without injuring General Motors.

Q. Now, I want to call your attention to Government's Exhibit No. 541 and 542. Exhibit 541 is a letter from Mr. Grubb to you dated September 11th, 1924, and it states:

"For your personal and confidential information, advise we are very desirous of securing the acid contract of the Bethlehem Steel Co., for their Steelton, Pa., Plant, and I was wondering if you would object to telling me what the prospect is of the G. M. placing any business with the Bethlehem Co. in the near future."

Do you recall that incident?

A. Yes.

Q. And is Exhibit No. 542 your reply?

A. Yes, that is my reply.

Q. That states:

"Your letter of Sept. 11th, in regard to General Motors' business with Bethlehem Steel Company, received.

"Our Lancaster Steel Products Corporation, Brown-Lipe-Chapin Division, and other divisions from time to time place orders for steel with Bethlehem or some of its subsidiaries. With the present state of the steel [fol. 3287] market we are buying steel from hand to mouth. In fact, with the inventories we have, we are purchasing a very small amount of steel. Our steel purchases are made after securing quotations from the various steel companies. Some months the order will go to Bethlehem or some of the other independent com-

panies; other months the same requirements will go to the Steel Corporation's plants.

"It is practically impossible for me to give you any information as to where our steel requirements will be placed from month to month, as our Purchasing Agents in the various divisions do not know themselves until a day or so before the order is placed.

"Our Brown-Lipe-Chapin Division were buying quite extensively from the Bethlehem Steel Company during the first six months of this year, and will continue to buy from them according to their needs if the Bethlehem's price and quality continue to be favorable in comparison with other companies.

"The above is about all the information I can give you on this subject."

Will you state whether or not this is a fair example of the treatment you would give of such request?

A. I think it is fair. I tried to sometimes—at least sometimes anyhow—to be polite and give them an answer.

Q. Did you consider you were giving any information that would in any way be detrimental to General Motors?

A. No, I don't think there was any information they could use to General Motors' detriment.

[fol. 3288] Q. Now, I want to call your attention to Government's Exhibit No. 543.

On the third page of this document is a letter from Mr. Lamot du Pont to Mr. Sloan:

"Our Explosives Department is confronted with the prospect of losing explosives trade in the Lake Superior district through a competitor taking its customers away in what is generally known as the 'reciprocity' argument.

"In order to combat this competition we desire to put before the Jones & Laughlin Steel Company interests and the Inland Steel Company interests the facts as to what of their products the du Pont Company and its affiliated companies buy from them. For this purpose, could you have someone send me a statement of the 1927 purchases by General Motors * * *

The second page contains Mr. Sloan's first reply to Mr. Lamot du Pont, and he says; "I have your letter of Janu-

any 18th. I will get the necessary data together and advise you in due course."

Now, I also want to show you in this connection, Mr. Pratt, General Motors Exhibit No. 200 for identification. Do you recall Mr. Sloan referring this matter to you?

A. Yes, with this letter in front of me, I do.

Mr. Hurd: if the Court please, I offer in evidence General Motors Exhibit No. 200, which is a communication from Mr. Sloan to Mr. Pratt.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 200.)

[fol. 3289] Mr. Hurd: It says:

"Attached is original letter from Lammot du Pont with copy of my reply.

"On general principles, I am not very keen—as I do not believe you will be—in developing things of this kind but this is the first time it has happened and it really is not very important for the reason that I do not believe we are buying to any great extent from any of these people unless it is the Inland Company."

Then, Mr. Pratt, I want to show you a document marked General Motors Exhibit No. 201 for identification, which purports to be a letter from you to Mr. Sloan dated January 21, 1928. Is this your reply to Mr. Sloan?

A. Yes, it is.

Mr. Hurd: if the Court please, I offer in evidence General Motors Exhibit No. 201.

(Said document so offered and received in evidence was marked General Motors Exhibit No. 201.)

Mr. Hurd: This relates to the inquiry by Mr. Lammot du Pont as to General Motors purchases which he might use as a matter of reciprocity. It states:

"I am in receipt of your memorandum of January 20th, enclosing letter from and copy of your reply to Mr. Lammot du Pont in regard to our supplying him with the amount of our purchases from the Jones & Laughlin Steel Company and the Inland Steel Company.

"I think we buy very little from the Inland Steel

[fol. 3290] Company direct. We do buy considerable cold drawn steel from the LaSalle Steel Company, who in turn buy their base product from Inland.

"We buy a great deal from Jones & Laughlin Steel Company. In fact, we have had under consideration a general requirement contract for them to supply a considerable portion of our cold drawn and cold rolled steel.

"This instance may be the first that Mr. Laimot du Pont has requested information of this kind from you, but we have had a great many similar requests from the du Pont organization in the last three or four years. This position I have taken as Chairman of the Purchasing Committee has been invariably to refuse to give the du Pont Company any information which they might use in any way to influence their customers to think that the du Pont Company in any way could influence General Motors Corporation in buying their materials and supplies because the particular customer bought from the du Pont Company. Personally, I think it is very necessary that we have a very definite policy in this respect, especially in connection with our dealing with the du Pont Company (who are working on the principle of reciprocity while General Motors is not), as I am afraid there are instances where du Pont salesmen have implied that they could influence General Motors' purchases. Nothing could be more detrimental to the morale of our Purchasing Agents, and to the general interests of our Corporation, than for any supplier to believe that anything can influence General Motors in choosing its sources of supply other [fol. 3291] than the three fundamentals of purchasing, namely—quality, service and price. I know you realize that as soon as any supplier feels that he can use collateral influence he is not as apt to give the utmost he can in quality, service and price to the one that deserves same, namely—the purchaser.

"In refusing to give the du Pont Company such information as requested by Mr. du Pont, I have been guided by the following considerations:

"(a) The du Pont Company in fact has no more right to such information than any of the other 60,000

stockholders in General Motors. We would not consider giving Mr. Cohen, the druggist—who might own five shares of General Motors stock—the amount of purchases General Motors made from Jones, McLaughlin Steel Company in order that he might sell Mrs. Jones face powder. (This is far-fetched but it is the same principle.)

“(b) If we supply the du Pont Company with the amount of our purchases from any company they wish to sell, and their salesmen are allowed to display this information to their prospective customers, it necessarily follows that the impression would be made upon the customer that General Motors wishes that particular supplier to consider in dealing with General Motors its relationship with the du Pont Company, or otherwise General Motors would not supply the du Pont Company with the information.

“(c) The principle of reciprocity must imply that you are giving something in order to get something. If the du Pont Company, in getting business, implies [fol. 3292] reciprocity on the part of General Motors' purchases—what does General Motors get? It would seem that in such reciprocity we are doing the 'giving' and the du Pont Company the 'getting.' If there is anything to be gotten our position should be to see that it is gotten for General Motors Corporation, rather than the du Pont Company.

“(d) If our Purchasing Agents know that we are willing to allow the du Pont Company to use our purchases to influence du Pont sales, can we expect them to always resist giving weight to other considerations than the best interest of General Motors in placing their orders?

“(e) I think that we are all pretty well agreed that we could not afford to use the principle of reciprocity in General Motors' purchases. If that is true we certainly cannot allow anyone else to imply that they can use General Motors' purchases for the purpose of reciprocity.

“In the particular case under consideration I see no difference in Mr. du Pont using the information he has requested in order to retain business than for him

to use same to get business. In my judgment, if the du Pont organization are not able to retain the business they have through the quality of their goods and the service they render, then they should not be allowed to retain it because General Motors purchases goods from that particular customer of the du Pont Company. The steel companies must know the amount of business [fol. 3293] they are doing with General Motors Corporation, and if being reminded of this volume of business by the du Pont Company results in the steel companies being willing to do something for the du Pont Company that they would not have done without such reminder, then we in General Motors are not getting all we should from the steel companies.

"I am perfectly willing in this instance that this information be gotten together and given to Mr. du Pont, as you have promised, but I do think that it is a very bad precedent to establish—unless I am wrong in the position I have been taking with the du Pont Company for the past three or four years, in regard to not allowing them to display to their customers any figures of General Motors as to the volume of our purchases from suppliers who are now or prospective customers of the du Pont Company.

"If you think I am leaning backward in matters of this kind and trying to maintain an impractical idea in our purchasing relations, please frankly say so as this is a very important matter and one in which I would like to be guided by your better judgment."

Mr. Pratt, did this fairly represent your attitude toward this matter?

A: It did. I might explain why I seemingly have a different attitude with Mr. du Pont than I did with some of the small men in the du Pont organization that wrote to me about reciprocity.

That was because I felt that when we dealt with Mr. du Pont, we were establishing policy. I felt when I dealt with Mr. Jones, whom I had known as a boy in the du Pont Company, [fol. 3294-3295] to help him, I was dealing with an individual and not the du Pont Company.

That was the fundamental difference that I always kept in mind in writing to the officials of the Du Pont Company.

Q. Did your position toward the policy General Motors should have with respect to the du Pont Company as set forth in this document ever vary, ever change?

A. As far as I know, it did not.

ADJOURNMENT

[fol. 3296] JOHN LEE PRATT, a witness on behalf of the Defendants, having been previously duly sworn, resumed the stand and testified further as follows:

Direct examination—(Continued).

By Mr. Hurd:

Q. Mr. Pratt, yesterday you testified that you had been on the General Purchasing Committee from its inception until, I believe you stated, 1929?

A. Yes, sir.

Q. You were Chairman of that Committee from 1926 to 1929?

A. Yes, sir.

Q. Mr. Pratt, will you state whether or not it was customary for the Committee or members of the Committee to receive inquiries from suppliers, or potential suppliers as to General Motors requirements of different times?

A. Yes, quite often.

Q. Did any of those requests ever go to you?

A. Yes.

Q. Mr. Pratt, I show you Government's Exhibits 350, 351, 352 and 353. The first one, Government's Exhibit No. 350 is a letter from Z. Phelps, dated May 1, 1926, in which he states:

"We are again looking into the possibility of manufacturing oilcloth and it will be of much interest to us to learn the approximate quantity of oilcloth and black enamels which is now used annually by the General [fol. 3297] Motors Corporation. If you can conveniently get this information for us, it will be very helpful and greatly appreciated."

Who was Mr. Phelps?

A. Mr. Phelps was a young man in the Development Department of the du Pont Company whom I had known when I was with the du Pont Company.

Q. You had known him when you were with that company?

A. Yes, sir.

Q. Do you recall receiving this document?

A. Yes, I recall receiving this.

Q. Now, can you tell us what you did with the inquiry?

A. I sent it to Mr. Lynah of the General Purchasing Committee and asked him if he could conveniently and readily get the information; if so, to do so.

Q. Government's Exhibit No. 351 is the transmitted letter of this inquiry?

A. That is my letter.

Q. Did Mr. Lynah obtain the information?

A. He did.

Q. Government's Exhibit No. 352, is that a reply that he gave you regarding this?

A. Yes.

Q. What did you do with the information?

A. I sent the information on to Mr. Phelps in Government's Exhibit No. 353. That is a copy of my letter.

Q. Mr. Pratt, I want to call your attention to the last sentence in Government's Exhibit No. 353, which is your transmittal letter to Mr. Phelps. The last sentence states:

"The above figures do not include Fisher Body—of these purchases we do not keep any statistics."

Will you explain that situation?

A. What I should have said there is that the Fisher Body did not participate in the Purchasing Committee, therefore [fol. 3298] fore the statistics were not available to the Purchasing Committee.

Q. Did the Purchasing Committee keep statistics as to purchases of all the General Motors divisions, of all products?

A. No, they only kept statistics on general contracts that the Purchasing Committee had made.

Q. You consider that this incident was of an unusual character?

A. No, I think we had a great many of them.

Q. Were these limited to the inquiries of the du Pont Company?

A. No. We probably had more from the du Pont Company than anybody else, because the du Pont Company had a special department, the Development Department; they were always developing new industries that they might be interested in.

Q. Now, I want to show you Government's Exhibit No. 315, which is a letter to you also from Z. Phelps dated August 27, 1924.

He states:

"It will be of much interest to us if you can conveniently find out the total quantity of ethyl alcohol which will be consumed annually by all of the General Motors units combined. Confidentially, we may in the near future consider a proposition to produce alcohol for the du Pont Co.'s requirements and if we should have a small surplus it would be much more desirable for us to find an outlet for this alcohol by turning it over to the General Motors Co. rather than attempting to sell it in the open market."

Do you recall this incident?

A. Yes, this is similar to this Development Department [fol. 3299] trying to develop its business.

Q. I show you Government's Exhibit No. 423. Is that your reply to Mr. Phelps with respect to this inquiry?

A. Yes.

Q. I want to call your attention to the second paragraph of Government's Exhibit No. 423:

"In addition to the above, the Fisher Body Corporation—in which, as you know, General Motors has a controlling stock interest but does not control from a management standpoint—has a requirement of approximately 50,000 gallons per year."

Will you explain to what you were referring in that sentence?

A. Mr. Phelps' letter spoke as if he expected to sell excess alcohol. What I meant to tell him here in this letter

was that General Motors was not making contracts for Fisher Body's requirements, and there were 50,000 gallons additional in Fisher Body's.

Q. If they wished to obtain the Fisher Body business, what would be the procedure?

A. He would have to get the records of the Fisher Body organization.

Q. Mr. Pratt, you have also testified yesterday that you were in charge of the General Motors accessory divisions for a great many years, starting in 1921, I believe, taking over from Mr. Sloan unofficially, then later officially, as vice-president.

In each of these divisions, will you state whether or not you received inquiries from potential suppliers of these accessory divisions?

A. Yes, sir. The accessory divisions were not covered by the General Purchasing Committee unless there was [fol. 3300] an exceptional supply, that they used a lot of, so quite often requests came to me.

Q. What procedure did you follow when you received requests concerning the accessory divisions?

A. I usually asked the accessory division involved for information that would enable me to answer the inquiry.

Q. Did you take any position with reference to whether that division should or should not deal with the inquirer?

A. I think not.

Q. Now, I want to call your attention to a document which has been marked General Motors Exhibit No. 202 for identification, and also 203 for identification, and Government's Exhibits No. 311, and No. 313.

First, as to General Motors Exhibit No. 202 for identification, do you recall the incident to which that refers?

A. Yes, sir.

Q. What was that situation?

A. This was where Mr. McGregor, who is another gentleman I used to associate with in the Development Department—he is now at this date in the Paint Department—trying to make a contract with the Hyatt Roller Bearing Company in order to get them to use the du Pont paint and varnish.

Mr. Hurd: If the court please, I offer in evidence General Motors Exhibits Nos. 202 and 203.

(Said documents, so offered and received in evidence were marked General Motors Exhibits Nos. 202 and 203.)

Mr. Hurd: Exhibit No. 202 is the first in this series, a [fol. 3301] letter from Mr. MacGregor to Mr. Pratt dated October 23, 1922, from the du Pont Paint Department, and states:

"I was talking with Mr. Coyne the other day relative to our Paint and Varnish Division getting a share of the up-keep paint for the Hyatt Roller Bearing Company and he advised me that you were the man with whom I should take up the matter. Our New York representative, Mr. Clause, has called on Mr. F. Weiss and while we have been pleasantly received we do not seem to get any business. Would be glad to hear from you as to whether there is anything further we can do."

By Mr. Hurd:

Q. Who was Mr. Coyne?

A. Mr. Coyne, when I was at the du Pont Company, was in the Sales Department. He was an elder statesman, I think possibly, of the du Pont Company at this time.

Q. At this time was Hyatt Roller Bearing Company one of the accessory divisions under your jurisdiction?

A. Yes, sir.

Q. General Motors Exhibit 203, is that your transmittal letter of this inquiry to the Hyatt Roller Bearing Division?

A. Yes, sir.

Mr. Hurd: This is a letter dated November 1, 1922, from Mr. Pratt to Mr. Forsythe:

"I am enclosing herewith copies of correspondence with Mr. F. S. MacGregor in regard to paint requirements of Hyatt Bearings Company.

"Will you please inquire into this subject and see just what the situation is."

[fol. 3302]

By Mr. Hurd:

Q. Will you look at Government's Exhibit No. 311.

Is that your letter to Mr. MacGregor in reply to his inquiry?

A: Yes, sir.

Mr. Hurd: That is dated November 1, 1922, and refers to Mr. MacGregor's letter and states that Mr. Pratt is writing Mr. Forsythe to look into the situation. Then it continues:

"Are you really making a good paint today, and something that we can conscientiously recommend to General Motors divisions? I personally know that two or three years ago the paint that you turned out was not of such a quality that I personally would like to recommend. What I have in mind is the Harrison paint that was used at Wawaset, and from the experience that I had there I have not felt that I could, in justice to General Motors' interests, urge the use of Harrison paint.

"If you have positively corrected what I suppose were your manufacturer's difficulties, and now have a paint that is of equal quality, and from a price and service standpoint you can meet other paint makers, I will gladly recommend the use of Harrison paint to those divisions of General Motors Corporation that I come in contact with, but I would like to have some assurance that you have accomplished the above before taking any definite position in this regard."

By Mr. Hurd:

Q. I want to call your attention to the words in that last paragraph: "I will gladly recommend the use of Harrison's paint".

[fol. 3303] What was the occasion for your making that statement?

A. Well, it had only been a couple of years since Mr. Durant left and asked us to help the du Pont Company, to see that they were not dealt unfairly with, that they had a square deal. I think that was the motive that made me do that.

Q. Now, will you look at Government's Exhibit No. 313, which is a report from Mr. Weiss to Mr. Forsythe. Mr. Weiss was in the Hyatt Division?

A. Yes, he was a purchasing agent of Hyatt.

Q. And at the last two lines he says, "I will purchase

Du-Lite Mill White, as I feel it will serve our purpose equally as good."

Now, will you look at the next page and tell us about how much was involved in this whole transaction from a dollar standpoint?

A. Well, I think the maximum was around \$1500 a year of maintenance paint.

Q. This is maintenance paint?

A. Yes.

Q. Now, Mr. Pratt, I want to show you another series of documents, a document marked General Motors Exhibit No. 204 for identification, Government's Exhibits No. 340, and General Motors Exhibit No. 205 for identification.

I believe the first document in this series in point of time is General Motors Exhibit No. 204 for identification, a letter from Jim Elms to you dated January 9, 1926. Do you recall this incident?

A. Yes, sir.

Q. Will you explain what it was, and what happened?

A. Mr. Elms was head of the paint companies at that time, and this letter, Exhibit No. 204, is the letter to me telling me that the Delco Light Company, which was one of the accessory divisions, had given his paint company [fol. 3304] an order for a carload of paint, and then had cancelled it. That's about it.

I then was talking to Mr. Biechler who was head of the Delco Light Company and told him about this occurrence and asked him to look into it, and the result of that is Government Exhibit No. 339, a letter from Mr. Biechler to me in regard to what he found the situation back of this order that Mr. Elms was complaining of.

Q. What was your understanding as to what that situation was?

A. The situation was that the Delco Light Company were attempting to put in some new methods of painting, dipping, and they found that the paint that they had been buying didn't do the job. They went, then Delco Light went to the Chevrolet Company who they knew were using this process of dipping, and the Chevrolet people told them that the du Ponts had some experts that could help them out.

They got in touch with du Pont Company and du Pont

sent some experts down there and showed them how the job could be done, and that was followed out by the Delco Light Company giving the paint section of the du Pont Company an order for a carload, that carload that Mr. Elms was complaining about.

Later the old supplier came in and after du Ponts had shown how it was done, why, he was able to get some paint that would also do the job, and after that they canceled the du Pont's order, and resumed business with the old supplier.

Well, personally, I didn't think that was too fair to have a company come in and do a job for them and show them how to do the work, and then give that company an order, [fol. 3305] and then later cancel that order because the old supplier had found out how the job could be done.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit Nos. 204 and 205, 204, which is the first letter in this series, is a letter from Mr. Elms to Mr. Pratt.

(Said documents, so offered and received in evidence, were marked General Motors Exhibits Nos. 204 and 205.)

Q. Who was Mr. Elms?

A. Mr. Elms was the head of the Paint activity of the du Pont Company, and a long-standing personal friend of mine.

Q. The first paragraph states:

"I have always promised myself that I would not add my name to the long list of people who are constantly asking favors from you for one thing or another."

Is it true that there had been a long list of people asking favors from you?

A. Yes, I think the correspondence shows that.

Q. Then Government's Exhibit No. 339, which is the second letter in this series, that is Mr. Biechler's reply to you after you had discussed the matter with him verbally?

A. Yes. I think I even showed him or read to him that part of Mr. Elms' letter complaining of what seemed to be unfair treatment.

Mr. Hurd: The first paragraph states:

"You read a letter to me from a du Pont official regarding an inquiry and order we had received from [fol. 3306] us for black enamel. Since my return, I have gone into the situation thoroughly, and the picture is something like this."

And he sets forth what it is. The next to last paragraph:

"I find, however, that our manufacturing, chemical and purchasing divisions feel that we would be in better hands possibly by dealing with du Pont than with Lowe Brothers. We will know sure about this within a few days, at which time we will communicate with du Pont, and will also advise you."

Then Government's Exhibit No. 340, is that your reply to Mr. Biechler after receipt of his letter?

A: Yes, sir.

Q. In that you state, skipping the first paragraph:

"I am glad to know that your manufacturing, chemical and purchasing divisions feel they would be in better hands possibly by dealing with du Pont than with local companies. From a business standpoint no doubt your organization would be influenced to give the business, under equal conditions, to the local concerns. However, I think when General Motors' divisions recognize the sacrifice that the du Pont Company made in 1920 and 1921, to keep General Motors Corporation from being put in a very bad light publicly—the du Pont Company going to the extent of borrowing \$35,000,000 on its notes when the company was entirely free of debt, in order to prevent a large amount of General Motors stock being thrown on the open market—they should give weight to this which in my mind more than over-balances consideration of local [fol. 3307] conditions. In other words, I feel that where conditions are equal from the standpoint of quality, service and price, the du Pont Company should have the major share of General Motors divisions' business on those items that the du Pont Company can take on the basis of quality, service and price. If it is pos-

sible to use the product from more than one company I do not think it advisable to give any one company all of the business, as I think it is desirable to always keep a competitive situation, otherwise any supplier is liable to grow slack in seeing that you have the best service and price possible."

Now, Mr. Pratt, I would like to know, in stating here that you felt the du Pont Company should be given the major share of General Motors business, other things being equal, were you expressing what you understood to be a General Motors policy?

A. No, sir. It was my own personal feeling.

Q. Upon what was it based?

A. Well, it was based on a long association with General Motors, and knowing really how much General Motors owed the du Pont Company for stepping into a very bad situation there when Mr. Durant got into financial difficulties.

Q. I call your attention to the last paragraph of the same letter:

"I have expressed my own personal sentiments in this letter to you in order that you might have my point of view, but I do not wish to influence your organization in any way that would be against your own good judgment, keeping in mind that above all the prime consideration is to do the best thing for Delco-Light Company, and that considerations in regard to the du Pont Company or other concerns are secondary, and I am sure this is your feeling."

To what extent did you carry out the policy you have expressed in that last paragraph that your personal sentiments were not to control, it was up to the manager to make his decision?

A. That was carried out in every instance, so far as I know.

I might explain, Mr. Hurd, that Mr. Biechler had been in the Delco Light Company, maybe a year or more than a year, and had been made General Manager. He knew nothing about the things that had happened in the past, and that was one of the reasons I thought it advisable to give

him some of the background and history of General Motors.

Q. The last document in this series is General Motors Exhibit No. 205, which is Mr. Biechler's letter to Mr. Pratt, in reply to Government's Exhibit No. 340.

I would like to call attention to the third paragraph:

"I think you will be glad to know that the du Pont paint can be secured at a better price than we can secure paint locally, so aside from helping the general situation, we are also lowering our costs."

Mr. Pratt, I now wish to show you another series of documents. These are Government's Exhibits 371, 372, 373 and 374:

The first one in this series is a letter from you to Fred G. Hughes, General Manager of the New Departure Manufacturing Company.

[fol. 3309] Was that another one of the accessories divisions under your jurisdiction?

A: Yes, sir.

Q. It states:

"Some of my friends in the du Pont Company called me today in regard to the fact that their subsidiary, The National Ammonia Company, were losing the ammonia business which they had formerly enjoyed with the New Departure Manufacturing Company. They tell me that their price and service is in every sense competitive.

"If this is true, I would be interested if you would look into this and advise me of the reason why it is desirable to give your ammonia business to others than the du Pont subsidiary; namely, The National Ammonia Company."

The next letter, Government's Exhibit No. 372, is Mr. Hughes' reply to you, dated December 10, 1934, the subject: "Ammonia Requirements."

Skipping the first paragraph:

"When we began to use National Ammonia for bright annealing our separator blanks, we had considerable trouble with water in their anhydrous ammonia which ruined the product.

"We had no such trouble with that from the Barrett Company. In the meantime, the General Motors Fleet Sales Company called our attention to the fact that the Barrett Company were large users of General Motors trucks and that anything we could do to help them would be greatly appreciated.

[fol. 3310] "In view of the unsatisfactory quality of the National product, and the Barrett ammonia being more satisfactory, and also that our business would be helpful to the Fleet Sales Company, we changed to the Barrett Company as supplier. We did not know that the National Ammonia Company was a du Pont subsidiary, but I do not believe that under the circumstances it should have made any difference."

Then the next document, Government's Exhibit No. 373, is your letter to Mr. McClellan of the National Ammonia Company.

In the first paragraph you state that you are sending along a copy of Mr. Hughes' letter, which is Government's Exhibit No. 372.

The second paragraph, you state:

"Don't you think it would be desirable for your organization to contact more closely with General Motors Divisions that you hope to interest in your product from two standpoints: first, see whether or not your ammonia really is suitable for the work in our division (note second paragraph of Mr. Hughes' letter); and second, that you might inform the management of your relationship to the General Motors Corporation.

"And now, you will pardon me if I get a little personal, and advise that last week I was four nights on the sleeper and four nights this week, and suggest that it might do some of the desk warmers in the du Pont Company good to get around once in a while. What do you think?

[fol. 3311] "Please call me any time that you think I can be helpful."

Now, Mr. Pratt, I want to call your attention particularly to the last part of the second paragraph:

"Second, that you might inform the management of your relationship to the General Motors Corporation."

What did you mean by that statement?

A. Well, what I had in mind, I think, was prompted by the fact that the du Pont division competition, the Barrett Company, had gone out and found someone in General Motors to tell them, to tell New Departure, that the General Motors Truck would be interested in their giving the business to Barrett.

Mr. Hughes' letter shows that the du Pont people had not even contacted—they didn't know that the ammonia was not satisfactory. I really thought that Mr. McClellan, or someone in his organization, should go up and tell the New Departure Company the many fine things that the du Pont Company had done for the General Motors Corporation, such as helping develop not only General Motors Corporation, but in fact the whole automobile industry, because New Departure depended on the automobile industry for its business.

Its prime business was supplying bearings to the automobile business, and it would be easy for anyone to make a good sales point by showing what the du Pont Company had done for the automobile industry.

They had helped in developing tetraethyl lead, and were very helpful with "Duco", two things which enabled the automobile industry to expand very much.

They could also have done some sales effort in connection with du Pont by pointing out that the du Pont Company [fol. 3312] had great research facilities, and if a company got in trouble with their products, through those research facilities, the companies could be helped.

Q. Did you instruct this division to change to a du Pont subsidiary?

A. No, sir, I did not.

Q. The last document in this series is Government's Exhibit No. 374, a letter from you to Mr. Hughes, dated December 14, 1934. This is a reply to Mr. Hughes' letter to you of December 10th?

A. That is correct.

Q. It states:

"Please accept my thanks for yours of December 10th in regard to your ammonia requirements.

"The reasons given for your purchase of ammonia from the Barrett Company are entirely satisfactory. However, I have suggested that a du Pont representative call on you and see if they cannot make their product satisfactory to your requirements."

Did you take any further action with reference to it?

A. So far as I know, none.

Q. I now wish to turn to another division, Mr. Pratt, the A.C. Spark Plug Division, and I show you a series of government's Exhibit Nos. 343 to 347, inclusive.

The first one from the point of time is 343, which is a letter dated April 16th, 1926, from Mr. Champion to you. He states:

"I am attaching herewith memorandum I have received from one of our Experimental Engineers, which is self-explanatory.

"The reason I am bringing this to your attention is [fol. 3313] because naturally we want to do business with the du Pont Company and I thought perhaps you would know whom to approach who would see that we receive proper attention, not only in supplying material on the basis that other firms are able to do, as there is no doubt but what du Pont should be in a position to do the same as other firms, but also that we are given the proper service."

Now, this is from the A.C. Spark Plug Company. Was that one of the accessory divisions under your supervision at that time?

A. Yes, sir.

Q. Who is Mr. Champion?

A. Mr. Champion was a very interesting character. He was a Frenchman. He had been the champion bicycle rider in France at one time. He came to America, and he was known as Albert the Champion. In addition to being a professional bicycle rider, he had had some experience in ceramics, and in spark plug manufacture.

He met Mr. Durant in the early days, and Mr. Durant was attracted by him. Mr. Durant organized a company with a capital of \$100,000.00. Mr. Durant put in \$75,000.00 for capital, and the other \$25,000.00 of the capital was issued to Mr. Champion.

He built up the company and had great energy, but one thing that he was as proud of as anything was that he was a Frenchman, and I think that he looked on the du Ponts as Frenchmen. He loved to deal with Frenchmen.

We had a great deal of trouble with him, and later he wanted to build some plants in France to show his compatriots how he could manufacture things. I didn't think it was wise, but finally I let him do it, and it turned out to be a great success. He ran the company with great success [fol. 3314] until his death about 1928.

Q. In this second paragraph of this exhibit, 343, he says:

"The reason I am bringing this to your attention is because naturally we want to do business with the du Pont Company."

A. I think that was the natural thought of a Frenchman. He did want to.

Q. Had you encouraged him to do business with the du Pont Company?

A. I don't know as I did. There is no reason why I should because I did not know of any possibility of doing business with the du Pont Company.

Q. Now, will you look at Government's Exhibit No. 344. That appears to be a letter from you to Mr. Moosmann. Who was Mr. Moosmann?

A. Mr. Moosmann was in the Enamel, I guess the "Duco" section of the du Pont Company, the Paint Department.

Q. Had you known him?

A. I had known him for a great many years.

Q. That letter transmits Mr. Champion's letter to you. The second paragraph states:

"Won't you please indicate to me the kind of a reply we should make, and return this letter to me in order that I may reply to same."

In Government's Exhibit No. 345, a letter of Mr. Moosmann to you, dated April 20, 1926, in which he states, in the third paragraph:

"You may assure Mr. Champion that this condition will be corrected immediately—."

[fol. 3315] Government's Exhibit No. 346, a letter from you to Mr. Champion, transmitting the letter from Mr. Moosmann.

And Government's Exhibit No. 347 is Mr. Champion's letter to you dated April 23, 1926. He said:

"I am in receipt of your letter of the 21st and certainly appreciate your taking up with the du Pont Company, the trouble we have been experiencing, and am glad to know that they will see that we get satisfaction."

Now, Mr. Pratt, I want to show you another series of documents, which is Government's Exhibits No. 348 and No. 349.

Government's Exhibit No. 348 is a letter from Mr. Knight to Mr. Champion, dated July 12, 1926.

Who was Mr. Knight?

A. I don't know Mr. Knight, but from this correspondence, I assume he was an experimental engineer of the Champion Company.

Q. This states, down below, on the first page, below the tabulations:

"On April 11th Mr. Champion wrote Mr. J. L. Pratt with reference to the service we were receiving at that time. Mr. Pratt took the matter up with Mr. J. J. Moosmann, Divisional Manager, Chemical Products Division, and since ~~that~~ that time the action we have been securing has been very much better, though from our standpoint it could be greatly improved.

"There seems to be too much lost motion, for instance the matter is taken up through the Flint office and then sent to the Detroit Office and then to Parlin."

[fol. 3316] Now, will you look at Government's Exhibit No. 349, which is a letter to you from Mr. Champion, dated July 14, 1926.

And it says, at the beginning of it:

"Referring to correspondence I had with you some time ago regarding material we purchased from du Pont I am sending you copy of memorandum which shows the difficulty we still have."

Then dropping down several lines, from the bottom of the page:

"When we were doing some development work it would be very much better if we could establish direct contact between Pyralin and ourselves. It is expensive to du Pont and to us and neither of us can get results."

I assume that means Parlin?

A. Parlin.

Q. (Reading):

"We would appreciate it if you could take that up with the person in authority and see what you can do for us regarding this matter."

Do you remember this incident, Mr. Pratt?

A. Yes, I remember this.

Q. What did you do, if anything?

A. Well, I think I took it up to Mr. Moosmann and asked him to try to straighten the situation out.

Q. What did you understand to be the problem involved here? A. As I understand the problem, the du Pont paint representative they sent to the Champion Company was not a technical man acquainted with the "Duco" enamels which [fol. 3317] they were trying to use. He had been a man in the old paint and varnish business, and the trouble was really a technical one. They needed someone out there in the A. C. Spark Plug Division who had the technical knowledge to help them out with their problems, their problem being in their development work.

Q. Do you recall whether or not Mr. Champion's request to short-cut this was worked out?

A. Yes, I think it was worked out by putting a man with the proper knowledge in closer access to the A. C. Spark Plug Division.

Q. I show you five documents which have been marked General Motors Exhibit Nos. 206 to 210, inclusive, for iden-

tification; are these the letters relating to this particular transaction?

A. Yes, sir.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibit Nos. 206 to 210, inclusive.

(Said documents so offered and received in evidence were marked General Motors Exhibits Nos. 206 to 210, inclusive.)

Mr. Hurd: The first one is a letter from Mr. Pratt to Mr. Moosmann dated July 16, 1926. He states:

"In April we had some correspondence in regard to the service your Company was rendering our A. C. Spark Plug Company. In connection with this I am handing you copy of memorandum that has come to my desk today."

Would that be the memorandum from Mr. Champion?

A. Yes, sir.

[fol. 3318] Q. (Reading):

"I don't know whether or not the suggestion of direct contact with the Parlin plant on experimental work, on the part of the A. C. Spark Plug Company, is practical. I know that certain things have to be done in a certain way for proper organization, and I do not wish to disorganize you to do what our A. C. Spark Plug Company thinks they must have.

"Won't you please write me frankly how far you think you can go in meeting the wishes of the A. C. Spark Plug Company for somewhat more direct and prompt action than they are getting under present conditions?"

207 is Mr. Moosmann's original reply to Mr. Pratt dated July 23, 1926;

General Motors Exhibit No. 208 is a further reply on July 29, 1926;

General Motors Exhibit No. 209 cleans up the matter, and is Mr. Moosmann's letter to Mr. Pratt dated August 17, 1926.

And the last document, General Motors Exhibit No. 210

is a letter from Mr. Pratt to Mr. Moosmann dated August 20, 1926. He says:

"Please accept my thanks for your letter of August 17th about arrangements which have been made to give Mr. Albert Champion the kind of service he thinks he should have."

Q. Mr. Pratt, in addition to inquiries, requests for information or assistance that came to you as part of the [fol. 3319] Purchasing Committee or as head of the Accessories Divisions, do you recall whether or not you also had inquiries and requests from friends because they happened to know you?

A. Yes, a good many of them.

Q. Was that confined to the du Pont Company?

A. No, sir.

Q. Well, were—

A. Could I interrupt, Mr. Hurd?

Q. Certainly.

A. I might say that I had made a great many inquiries myself when I was down at the du Pont Company from friends and other people trying to get information from them to help me do my job down there.

Q. That is friends in concerns other than the du Pont Company?

A. Yes.

Q. I want to call your attention to Government's Exhibits Nos. 455 and 456. Government's Exhibit No. 455 is a letter from Mr. Harrington to you, dated March 22nd, 1924.

Who was Mr. Harrington?

A. Mr. Harrington was a gentleman in charge of the dye-stuffs department, I think, at Wilmington, Delaware, at that time, of the du Pont Company.

Q. Did you know him?

A. Very well.

Q. How long had you known him?

A. Oh, eighteen or nineteen years.

Q. Had he been in the du Pont Company when you were working there?

A. Yes, I think he was at the du Pont Company ahead of me.

Q. Now, this exhibit, 455, in the second paragraph states:

"What I wanted to see you about was to ask your advice on a particular subject, so I am writing you now so that I may get your advice anyhow. I have [fol. 3320] noticed considerable trouble with fading of the upholstery in my Cadillac closed car. I was wondering if you would think it possible for us to offer service to the Fisher Body people as to dyes to be used in making their upholstery which would be fast, and whether, if we could offer such service, the Fisher Body people would specify the type of dyes to be used,—not necessarily ours. Of course, if we could get them to specify ours we would be delighted, but I realize that would be difficult. This business should be very large and I do not believe we are enjoying a very large quantity of it at the present time.

"I realize this is a delicate subject and one on which I would like to have your advice as to whether it is an angle which we could approach at all, and if it is, what is the proper method of approach."

Government's Exhibit No. 456, your reply to Mr. Harrington, dated March 26, 1924, as to that I call your attention to the second paragraph:

"As you have probably sensed, the Fisher body outfit is pretty difficult to deal with and I hardly know how to advise you to approach them on this subject."

What was the basis for that statement?

A. Well, the Fisher brothers have built up a wonderful business in closed bodies. They were very proud of their product quality, and I thought it would be rather difficult to go to them with a complaint that the fabric they were putting in was fading.

That is what I meant by a "difficult thing," so the normal approach would have been to the Cadillac Company, and let [fol. 3321] the Cadillac Company take it up with Fisher Body, but if I did that I was afraid Mr. Harrington would make very little progress with the Fisher Body, if they knew he was complaining about the kind of product they had. So it was a rather delicate problem.

Q. Do you recall whether or not you did anything further?

A. I think I did. I used to follow these things through. I promised I would see Mr. Fred Fisher, and follow through with him, but I don't think I would do anything to help Mr. Harrington on that.

Mr. Hurd: Now, I show you another series of documents, also dealing with this problem of fabrics of Fisher Body, and that is Government's Exhibit No. 544, General Motors Exhibit for identification No. 211, Government's Exhibit No. 545, and General Motors Exhibit for identification No. 212.

The first one in this series is Government's Exhibit No. 544 which is another letter from Mr. Harrington to you in 1929, January 29, 1929, and the first paragraph states:

"I want to ask your advice. In our efforts to sell dyestuffs through our various contacts with the mills that supply fabrics to General Motors, we find that there are considerable rejections by General Motors for quality of fabric, the rejections largely having to do with the color and fastness character which really come back to the quality of dyestuffs used. Your Company obviously buys materials on rigid specifications, where tests are susceptible of being applied to the product as received, etc. This type of specification purchase is all right, but when it comes to the question of the purchase of fabrics which goes back to the question of the quality [fol. 3322] of the dyestuffs used, I am not so sure but what there is a little lack of detailed technical information.

"I am wondering if we could be of any help to General Motors by offering the services of our laboratories as a place for certain people from the Inspection Division of General Motors, who have to do with the inspection of fabrics, to visit and let us give them all the information that we have in common with the properties of dyestuffs."

And passing down to the last paragraph:

"I really believe that we can be helpful and I am just wondering if you see it in the light that I have attempted to present it and if you do, whether you

would advise who would be the person for us to get in touch with to see whether we could sell this idea of the possibility of helpfulness on our part. I believe my idea is sound. If you do not think so, I would appreciate your telling me so."

Q. Do you recall what you did with this matter?

A. Yes, sir, I sent it to the man who was the head of the Fisher Body at that time, Mr. Ed Fisher.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibits Nos. 211 and 212.

(Said documents so offered and received in evidence were marked General Motors Exhibits Nos. 211 and 212.)

By Mr. Hurd:

Q. Is Exhibit No. 211 a letter to you from Mr. Ed Fisher [fol. 3323] dated January 31, 1929, is that your transmittal letter?

A. Yes, sir.

Mr. Hurd: This states:

"I am enclosing herewith a letter from Mr. W. F. Harrington of the E. I. du Pont de Nemours & Co., which I think is self-explanatory.

"If you think anything constructive can be done along the lines of what Mr. Harrington is thinking, I would be very glad to put him in contact with anyone in your organization that you might suggest."

And Government's Exhibit No. 545, Mr. Pratt's acknowledgment of Mr. Harrington's letter, in which he says:

"My own reaction is that it would be a very constructive thing."

And General Motors Exhibit No. 212 is a letter from Mr. Ed Fisher to Mr. Pratt, and I wish to call attention to the first page, about eight lines from the bottom:

"If we attempted to dictate in any way to the manufacturers of fabrics, as to the kind or quality of dyes

they use, I think that every time something came up that was wrong they would pass it on to us and say that we specified this or that and that we should be held responsible. I am sure that I or anyone else in our organization would not care to accept this responsibility. If we had this trouble with only certain manufacturers and it could be traced back that they all used the one make of dye, then there might be something worthwhile looking into regarding the quality of dyes [fol. 3324] used; but I am sure that they are all using different makes of dyes and it cannot be attributed to that.

"We are very thankful for du Pont's offer and appreciate it very much."

Q. Mr. Pratt, I now show you Government's Exhibits Nos. 546, 547 and 548.

Exhibit No. 546 is a letter from Mr. Fitterer, Manager of Cellulose Acetate Sales, to you, dated August 30th, 1934. Had you known Mr. Fitterer before this?

A. I had known Mr. Fitterer since 1905, when he was a clerk at the Parlin plant and handled the payroll.

Q. This letter, Exhibit No. 546, states:

"We are interested in expanding our market for Cellulose Acetate and recently learned that one of the rubber companies, who are one of our smaller consumers, use our acetate in an acetone solution as an 'anti-stick' on the metal parts of rubber motor mounts where they do not want the moulded rubber to adhere.

"I assume that General Motors are purchasers of these rubber motor mounts and wonder if I could trouble you to send me the names of your sources of supply so that we might approach them for what material of our manufacture they could use.

"It has been a long while since I have run across you and I hope you are well and happy."

Exhibit No. 547 is your reply to Mr. Fitterer, dated August 31st, 1934, in which you state:

"General Motors produces its own rubber motor [fol. 3325] mounts in its Inland Manufacturing Company, at Dayton, Ohio."

Was that another one of the divisions under your jurisdiction?

A. Yes, that was one of the Accessory Divisions.

Q. (Reading):

"If your organization has not contacted with Inland on this problem, we would be glad for you to have someone tell them just what you know about same.

"Our Inland boys are working very close with the du Pont Company on their synthetic rubber, and I am sure you will have no trouble in getting a hearing for your cellulose acetate.

"It was indeed a pleasure to hear from you, because I have often wondered where you were."

Exhibit No. 548 is Mr. Fitterer's acknowledgment to Mr. Pratt.

Do you recall any incident, Mr. Pratt, where people from concerns other than the du Pont Company have made inquiries from you as to how they could get business from General Motors, asking your help?

A. Yes. There were a great many of them, but I can't pick them out of the air. I would have to refresh my memory. It goes back a great many years.

There are a few I remember. American Woolen Company was one who appealed to me to help to try to get them on a better basis with General Motors.

It is pretty hard for me to pick things out of the air like that, but I know there were lots of them.

[fol. 3326] To refresh your recollection, do you recall any inquiry from Mr. Stettinius after he left General Motors for help?

A. Yes. Yes, he came to me and wanted to know how U. S. Steel could get more of General Motors business. They had lost position very much with General Motors because they had not been making the right type of steel. I gave them all the assistance I could.

Q. Mr. Pratt, I am going to show you General Motors Exhibits 213, 214, 215, and 216, for identification.

Do you recall this incident?

A. Yes. That is another instance of this kind.

Q. The first one of these exhibits, Exhibit 213, appears to be a letter from a Mr. Mason? Who is Mr. Mason?

A. Mr. Mason was a contractor who worked in New York, but he lived down in Kentucky. He and I had been friends for a great many years. We had one thing in common, that is, we were both born on the same day, the same age.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibits 213 to 216, inclusive.

(Said documents so offered were received in evidence were marked General Motors Exhibits Nos. 213 to 216, inclusive.)

By Mr. Hurd:

Q. Exhibit No. 213, the first one in the series, is a letter from—is that Silas B. Mason?

A. Silas B. Mason.

Mr. Hurd: This is a letter to Mr. Pratt, dated September 28, 1931:

“Dear John:

“Attached hereto is a letter from Guy Van Sant which is self-explanatory.

[fol. 3327] “I believe from what he has told me that he has on hand some Appalachian Oak of good quality, and if you or any of your subsidiary companies are in the market for this material, he is prepared to sell at satisfactory prices.

“If you think it worth while, I will very much appreciate it if you will put him in touch with the proper men.”

The Court: What is Appalachian Oak?

The Witness: That is oak that grows in the Appalachian Mountains in Kentucky, West Virginia, and Virginia. It is like white oak.

The Court: Was that used in the frames?

The Witness: No, it was used in automobile bodies. At this time Fisher Body built a composite body, the frame of the body, the supports of which were oak.

The Court: It was used in body frames?

The Witness: Body frames, yes.

By Mr. Hurd:

Q. And General Motors Exhibit No. 214 is your reply to Mr. Mason, dated September 30, 1931:

"I have your letter of September 28th, enclosing one from Mr. Van Sant, and I am enclosing herewith copy of letter today written to Mr. E. F. Fisher—"

Is this the same Ed Fisher that you sent the du Pont inquiry to?

A. Yes, sir.

[fol. 3328] Q. (Reading):

"—who is responsible in the Fisher Body organization for their lumber requirements.

"I am under the impression that there is a good deal of distress lumber on the market at present and that we have been able to buy our recent requirements at very attractive prices."

General Motors Exhibit No. 215 is Mr. Pratt's letter to Mr. Ed Fisher, dated September 30, 1931.

"I am enclosing herewith letter from the Appalachian Lumber Company, of Lexington, Kentucky, which was passed on to me by a friend, Mr. Silas Mason, in regard to dry white oak lumber which the above company has for sale.

"If you are going to be in the market in the near future for any additional white oak lumber I would appreciate it if you would give the Appalachian Lumber Company an opportunity to bid on same."

General Motors Exhibit No. 216, the last one in this series, is Mr. Fisher's reply to Mr. Pratt, dated October 16, 1931:

"Your letter at hand with letter attached from the Appalachian Lumber Company of Lexington, Kentucky. I am afraid that the location of this company will be to their disadvantage, owing to shipping to the plants where we are using oak generally.

"However, I have turned your letter over to Mr. Claude Crusoe and have asked him to show them the

[fol. 3329] courtesy of letting them figure on some of our releases."

Q. Who was Mr. Crusoe?

A. Purchasing agent for the Fisher Body Company.

Q. Mr. Pratt, have any of these letters dealing with the du Pont Company been from any of the top executives of the du Pont Company?

A. I don't remember any.

Q. Did you ever have any request from any of the top management of the du Pont Company for help in getting the General Motors' business?

A. No. Mr. Harrington came to pretty near top management, but he wasn't top when he was writing to me.

Q. He later on became part of the top?

A. Yes.

Q. How about Mr. Lamot du Pont or Pierre du Pont or Irenée du Pont?

A. I have no recollection of their ever writing me or discussing that with me.

Q. Now, I want to show you Government's Exhibit No. 470. This is a letter from Mr. Lamot du Pont to Mr. Sloan, dated October 28th, 1926.

It deals with a new pyroxylin surfacer.

"Our Paint Department tell me they have developed a pyroxylin surfacer for automobile bodies which has been adopted by some important automobile manufacturers, and which in the opinion of our men, produces better finish than the ordinary surfacers.

"General Motors and Fisher have not adopted this new surfacer, apparently because it is somewhat more expensive than what they are using. Our men are perfectly sure that they can prove that wherever Fisher builds a new plant for body finishing it is more economical to use the new surfacer than that now used, simply because the new surfacer does not require as expensive an installation in ovens, etc.

"Recalling the difficulty that was had in 'selling' 'Duco' to the General Motors units, I am impelled to drop you a line in this case, feeling that the same inertia is acting against this pyroxylin surfacer as delayed the adoption of 'Duco'."

Now, I show you, Mr. Pratt, Government's Exhibit No. 471, which is a letter from you to Mr. du Pont.

Do you recall that this matter, covered in the previous exhibit, 470, was referred to you in Mr. Sloan's absence?

A: Yes, I usually handled matters of this sort when Mr. Sloan was away.

Q: The inquiry had not come to you? It had come to Mr. Sloan?

A: It had come to Mr. Sloan.

Q: This second document, Government Exhibit No. 471, Pratt's reply to Mr. Lamot du Pont's letter to Mr. Sloan, states:

"In Mr. Sloan's absence your letter of October 28th in regard to the new pyroxylin surfacer for automobile bodies has been referred to me.

"I think the reason General Motors and Fisher have not adopted this new surfacer is because they believe our Research Department have developed less expensive thinners and pyroxylin mixtures that will be perfectly satisfactory for automobile finishes than the du Pont Company are now supplying and, naturally, they resist the effort of your organization to sell them on [fol. 3331] something that from a cost standpoint instead of being less is more expensive.

"There is an unfortunate feeling in our organization that the du Pont Company never takes the initiative in bringing costs down. All lowering of cost has to be initiated by us through bringing in competition. This is not the case with most of our suppliers, who, recognizing that the increased volume of automobile business has been largely developed through lowering cost of the automobile, are always working with us and quite frequently on their own initiative give us price reductions through methods that they have developed in lowering their own costs. The impression in our organization in this regard toward the du Pont Company may be unjust, but, nevertheless, it exists and I think some real effort should be made in your organization to counteract this impression.

"Notwithstanding the above, I am calling the new development to the attention of Mr. Ed Fisher, who has

charge of the installation of equipment in the Flint Body plant, as indicated by the enclosed letter."

Then Government's Exhibit No. 472. Mr. Pratt's letter to Mr. Fisher, dated October 29, 1926:

"I have learned for the first time that the du Pont people claim to have a new type of 'Duco' that produces a better finish than their present 'Duco.' They also claim that this new 'Duco' does not require as expensive an installation in ovens and other equipment for application and that in a new plant the installation could be so much simpler than the present installation [fol. 3332] for application of 'Duco' that notwithstanding that this new 'Duco' will cost more money it will be more economical to use and will produce a better finish than that at present used.

"I do not know whether this has been brought to your attention, but thought if it had not, you would be very glad to know of it so that if the claims of the du Ponts can be substantiated, you would like to take advantage of anything that it offers in the new plant which you are now equipping at Flint."

Now, Mr. Pratt, while you stated that you don't recall receiving requests from the top management of du Pont for assistance in getting business for the du Pont Company, do you recall whether or not you had requests from the top management with respect to other matters? Requests to help out their friends, or anything of that sort?

A. No, I don't think I did—yes, I did, too. Yes, there were cases. I remember there were two or three cases.

Q. I want you to look at two documents that have been marked for identification as General Motors Exhibits 217 and 218.

Do you recall these documents?

A. Yes. Since these were brought to me, I remember several cases.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibits 217 and 218.

(Said documents so offered and received in evidence were marked General Motors Exhibits Nos. 217 and 218.)

By Mr. Hurd:

Q. These deal with the M. A. Hanna Company. What [fol. 3333] was the relationship between the M. A. Hanna Company and General Motors at this time?

A. M. A. Hanna Company was the supplier of pig iron, and we had a contract that Mr. Durant had made back in 1920, a ten year contract, and we were still operating under it.

Q. You were still operating under that ten-year contract?

A. Yes.

Q. What was your attitude towards this contract?

A. Well, the M. A. Hanna Company was one that had not given us too good service. There were a lot of companies on long term contracts that were made in the 1920 period that recognized that conditions had changed, and were willing to modify their contract.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibits Nos. 217 and 218.

(Said documents so offered and received in evidence, were marked General Motors Exhibits Nos. 217 and 218.)

Mr. Hurd: First, General Motors Exhibit No. 217 is a letter from Pierre du Pont to Mr. Pratt, dated May 27th, 1926:

"Dear Mr. Pratt:

"Some days ago I had a visit from Mr. Charles N. Hickok of the M. A. Hanna Co., of Cleveland, Ohio. While Mr. Hickok devotes his time to the ore end of the business, he inquired as to how he and Mr. Hanna might get in touch with those of the General Motors corporation who are interested in pig iron. Mr. Sloan refers me to you in this matter. Therefore, if Mr. [fol. 3334] Hickok or Mr. Hanna should call upon you, I hope that you may be able to give them the information that they desire. As a matter of fact, I believe that their chief interest is to become personally acquainted with the General Motors crowd."

General Motors Exhibit No. 218 is Mr. Pratt's reply to

Mr. Pierre du Pont, dated June 8th, 1926.

"I have your letter of May 27th in regard to the visit you had with Mr. Charles Hickok of the M. A. Hanna Company of Cleveland, Ohio.

"I do not know whether Mr. Hickok advised you that the M. A. Hanna Company are now receiving practically all of our business in pig iron except high silicon iron. This is under contract made during Mr. Durant's regime in 1920, for a ten year period, and is a contract which I think we will be very glad to cancel as it has worked very much to our disadvantage.

"I will be very glad to see Mr. Hickok or Mr. Hanna at any time."

Mr. Pratt, I show you another series of documents which have been marked for identification as General Motors Exhibits Nos. 219, 220, 221, 222 and 223.

These deal with the American Brass Company.

By Mr. Hurd:

Q. Do you recall what the incident was to which these refer?

A. Yes, we dealt quite extensively with the American Brass Company, and in some cases they were very good suppliers, and in other cases they were not too good. [fol. 3335]. I think this refers to when we considered going into the manufacture of brass tubing. It says we were concerned over that tubing, and we were thinking of going into the manufacture of tubing.

Q. What was your understanding as to the attitude Mr. Lamont du Pont took?

A. Mr. du Pont thought that we should make satisfactory deals with the American Brass Company.

Q. What position did you have?

A. We were not very happy with the way they handled their tubing business. At that time, as I remember the American Brass Company supplied to a lot of small manufacturers who were involved in making the tubing that we used. We used a great deal of it in Frigidaires and a great deal of it on the automobiles for gas lines and things of that sort, a small tubing, a quarter of an inch. The American Brass Company supplied a large tubing to the other manu-

facturers that they cut down into the small tubing that we used.

Q. Did you comply with Mr. Lammot du Pont's request?
A. No, I don't think we did.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibits Nos. 219 to 223 inclusive.

(Said documents, so offered and received in evidence, were marked General Motors Exhibits Nos. 219 to 223, inclusive.)

Mr. Hurd: The first one of these, General Motors Exhibit No. 219, is a letter from Mr. Lammot du Pont to Mr. Sloan, dated September 16, 1926:

"In one of the reports considered at the last meeting of the Finance Committee, there was mentioned an [fol. 3336] investigation now being made into the manufacture of copper tubing—it being stated that it was found impossible to secure satisfactory assurance of our supplies.

"Mr. Grubb has recently been negotiating with the American Brass Company, for the sale to them of our Everdur business. He reports that in conversation with Mr. Weaver, Vice-President of the American Brass Company, in charge of sales, Mr. Weaver states that he understood General Motors Corporation was concerned over their supply of tubing, and that General Motors Corporation could rest assured that the American Brass Company would take care of their requirements at any time desired, indicating that they were perfectly willing to build whatever additional capacity might be required."

The second document, General Motors Exhibit No. 220, is Mr. Sloan's reply to Mr. du Pont, dated September 20, 1926.

He says that:

"Mr. Pratt knows more about this than I do and I have referred the matter to him—"

General Motors Exhibit No. 221 is Mr. Pratt's reply to Mr. Lammot du Pont, dated September 28, 1926.

The second paragraph:

"We have no doubt but that the American Brass Company are in position to take care of our requirements, but at a price satisfactory to the American Brass Company."

[fol. 3337] General Motors Exhibit No. 222 is Mr. Lammot du Pont's reply to Mr. Pratt.

General Motors Exhibit No. 223, the last one of these documents, is Mr. Pratt's final letter to Mr. Lammot du Pont, dated October 1, 1926.

Reading from the third paragraph on the first page:

"In regard to the American Brass Company, they are in production of small size tubing in a small way and I understand would like some guarantee from us before they would be willing to put in equipment to take care of part of our requirements. It now looks as though our present suppliers will be able to take care of our requirements for the next couple of years, and we do not feel we should make any overtures to the American Brass Company in order to get them actively engaged in copper tubing, which would seem to be naturally a branch of their business."

Now Mr. Pratt, I would like to show you another series of documents marked General Motors Exhibits Nos. 224 to 226, inclusive.

These relate to fire brick from the General Refractories Company.

By Mr. Hurd:

Q. Do you recall this incident?

A. Yes, I remember that.

Q. What did this involve?

A. Oh, this refers to some boilers that we were installing down at Anderson, Indiana, and the question was raised by some of Mr. du Pont's friends that a General Refractories [fol. 3338] Company had not received proper treatment by the management at Anderson in connection with the purchase of the firebrick.

Q. And what did you do about it?

A. Well, I took it up with the boys down at Anderson and found that they had handled it alright, in my judgment, and wrote to Mr. du Pont accordingly.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibits Nos. 224 to 226, inclusive.

(Said documents, so offered and received in evidence were marked General Motors Exhibits Nos. 224 to 226, inclusive:)

Mr. Hurd: The first one of these, General Motors Exhibit No. 224, is a letter from Mr. Lamot du Pont directed to Mr. Pratt; and dated September 22, 1926:

"Dear John:

"I am enclosing letter from Jack Sproul of the General Refractories Company, dated September 20th, also letter dated September 11th by A. A. Wedderspoon, both in regard to the possibility of the General Refractories Company receiving some orders for firebrick from the Remy Company, Anderson, Ind. These letters were sent me through Mr. T. C. du Pont."

By Mr. Hurd:

Q. The Remy Company was one of your divisions?

A. One of the accessory divisions.

Mr. Hurd: (Continuing)

"Jack Sproul is the son of Governor Sproul of [fol. 3339] Pennsylvania, who is a good friend of ours, and we would greatly appreciate it if some business could be turned his way. We, of course, do not ask that he be given any orders for firebrick, or anything else, without justification, and feel that we are justified in asking that the General Refractories Company, which is a well known concern, of good reputation, be given an opportunity to bid, and receive some consideration if prices, quality and service are at least on a par with their competitors.

"We will greatly appreciate anything that can be done."

General Motors Exhibit No. 225 is a letter from Mr. Pratt to Mr. Lamot du Pont, dated October 2, 1926, acknowledging the previous document, and states, in the second paragraph:

"I am having this matter investigated but I do not believe the information given in his letter—that they do not have a look-in on General Motors' business—in true. Mr. Sproul's approach of trying to bring influence to bear in order to get business from General Motors Corporation will not work. If this Company can satisfy our Divisions that they have a product competitive from the standpoint of quality, price and service, I know our Divisions well enough that if the General Refractories Company's representatives go after the business they will have an opportunity to quote, and while I do not claim that our Purchasing Departments are 100% pure, I do believe we have a spirit in our Purchasing Departments of always attempting to get the best as they see it for General [fol. 3340] Motors Corporation. For this reason we have always hesitated to suggest any firm for special consideration.

"We believe it is the duty of the supplier to establish the merits of his product to our Corporation, and not our duty to ask our Purchasing Departments to give special consideration to any firm."

General Motors Exhibit No. 226 is Mr. Pratt's letter to Mr. Lamot du Pont.

By Mr. Hurd:

Q. Was this written after you had checked the situation?

A. Yes, sir.

Mr. Hurd: And the last paragraph:

"From my check-up I do not believe that the General Refractories Company has any right to complain of their treatment by General Motors' divisions, and I think the greatest assistance you can give the General Refractories Company will be to impress on Mr. Sproul the necessity of his organization working closely with

our organizations to help them determine what fire-brick will give General Motors Corporation the best results for the money expended."

There is one other incident. I believe we have a few minutes, and I believe I can cover this before adjournment time.

The Court: Yes.

By Mr. Hurd:

Q. I show you General Motors Exhibits Nos. 227, 228, and 229 for identification, Mr. Pratt. These relate to the oil burner business. Do you remember this matter covered by [fol. 3341] these documents?

A. Yes.

Q. What was that situation?

A. Well, we were experimenting and building, planning to go into the oil burner business to help out a lot of dealers that we had out in the country that would have been put out of business selling Delco Light plants. They were to supply electricity. The power companies had extended their lines out into the country so there was very little business for the Delco Light plants, and we were looking for other products that we could put in there. Oil burners was one that we were considering, and it had gotten rumored around that we were carrying on our experiments at Rochester, New York, and it got rumored around to the Anthracite Coal region that we were going into the oil business quite seriously, and they took it up with Mr. Belin who was president of the E. I. du Pont Company of Pennsylvania, protesting General Motors going into the oil burner business.

Q. And do you recall the position Mr. Lammot du Pont took?

A. Yes, Mr. Lammot du Pont thought it would harm the du Pont Company, and that it might be better for us to consider manufacturing something that Anthracite Coal could use.

Q. What position did you take?

A. I took the position I thought we ought to go ahead, and go into the oil burner business if our experiments looked like we could build a successful business for ourselves and our dealers.

Q. And what happened?

A. We went on with the business.

Q. Are you still in the business?

A. Yes, sir.

The Court: You don't make stokers, do you?

The Witness: No, we don't make stokers. The trouble with stokers, Judge, is that people still have to take the ashes out.

Mr. Hurd: If the Court please, I offer into evidence Gen-[fol. 3342] eral Motors Exhibits 227, 228 and 229.

(Said documents, so offered and received in evidence, were marked General Motors Exhibits Nos. 227, 228 and 229.)

Mr. Hurd: The first one of these is a letter from Mr. Lammot du Pont to Mr. Pratt, dated January 29, 1931, and states:

"I have just had a talk with Mr. G. D'A. Belin, President of E. I. du Pont de Nemours & Company of Pennsylvania, supplying the anthracite district with explosives, and with Mr. J. W. McCoy, General Manager of our Explosives Department, regarding the attitude of the anthracite coal companies toward General Motors' prospective move into the manufacture and sale of domestic oil burners.

"From what I now learn, the anthracite coal companies are very much wrought up on this subject. It is beyond my understanding how they can consider the matter so seriously in view of the number of oil burners already in the market, but nevertheless I am assured and am satisfied that they are so wrought up.

"I am convinced that the outlook for du Pont business in the anthracite field is jeopardized seriously and am equally convinced that du Pont cannot dictate to General Motors with respect to their going into the oil burner business, nor can the advantage or disadvantage to du Pont be considered at all as a factor by General Motors in reaching a decision.

"As a General Motors man, I would like to point out the following factors which seem to me to have a bearing on the case."

[fol. 3343] Then he sets forth certain reasons why General Motors should not go into the business.

General Motors Exhibit No. 228 is Mr. Pratt's reply to Mr. Lammot du Pont.

By Mr. Hurd:

Q. I notice this is addressed to Mr. Lammot du Pont as Chairman of the Board of General Motors Corporation, dated February 6, 1931. Was Mr. Lammot du Pont Chairman of the Board of General Motors at that time?

A. I think so. I feel sure he was, due to the fact that I addressed him that way.

Mr. Hurd: Now, turning to the second page of this:

"In the past we have had sufficient courage to recognize mistakes and abandon developments which it seemed impossible to make profitably, and I hope the management of General Motors Corporation can be counted on to follow the same policy in regard to the oil burner. On the other hand, if the oil burner can be manufactured and marketed at a profit, and it will supplement those utilities the Corporation is undertaking to market, that will make life more comfortable, I think we would be cowardly in abandoning same at this time because a poorly led association of coal producers did not recognize that the world progresses, and that any company that hopes to succeed has to take part in progress.

"The agitation among the anthracite coal producers in regard to oil burners is nothing compared with the agitation we had a few years ago from ice manufacturers' associations against Frigidaire, and a great many threats were made that ice manufacturers would not buy General Motors products if we continued with the development of Frigidaire. At that time we took [fol. 3344-3345] the position that if household refrigeration was an improvement over ice boxes General Motors would not reap any permanent ill-will by proceeding on sound business lines to promote iceless refrigeration. We believe the same line of reasoning holds in the case of oil burners, and while we do not believe in doing anything to stir up antagonism of any

portion of any industry, we do believe that if any industry takes an unsound position in regard to any activity of the Corporation that is no reason for us to discontinue that activity."

And General Motors Exhibit No. 299, is the letter to the Executive Committee of the General Motors Corporation on January 21, 1932, and shows a report which was received from Vice President Pratt, dealing with the question of General Motors' position in the household appliance field, "and particularly recommending that the Delco Appliance Division be permitted to go ahead with the manufacture and sale of oil burners in a small way, with the understanding that no substantial investment will be required.

"Upon motion, this report was accepted and the recommendations contained therein approved."

By Mr. Hurd:

Q. Did you ultimately go into it only in a small way?

A. No, we are not the largest manufacturers of oil burners, but we have quite a business there, and I might add that I don't think it hurt the du Pont's business in the anthracite coal region.

ADJOURNED

[fol. 3346] The Court: Proceed, please.

JOHN LEE PRATT, called as a witness on behalf of the defendants, having been previously duly sworn, resumed the stand and testified further as follows:

Direct examination (Continued).

By Mr. Hurd:

Q. Mr. Pratt, I want to call your attention to a series of government exhibits, Government's Trial Exhibits Nos. 363 and 364, and Government's Trial Exhibits Nos. 367 and 368.

The first one, Government's Exhibit No. 363, Mr. Pratt, is a letter from Mr. Lammot du Pont to Mr. Sloan, dated October 28, 1926. I would like to call your attention to a few passages in the document.

It starts out with the statement:

"Our Paint Department recently has been considerably upset because of the difficulty in getting accurate information as to the probable requirements of the various General Motors units for 'Duco'."

Then skipping two sentences:

"Personally, I am mystified, because the forecast schedules submitted to the Finance Committee do not seem to agree at all with the dope that our Paint Department gets from its representatives in Flint and Detroit.

"I have always considered the General Motors Finance Committee reports as strictly confidential. Do you see any objection to my giving our Paint Department [fol. 3347] ment such forecast figures as are included in these reports?"

Mr. Pratt, do you recall this document?

A. Yes, Mr. Hurd.

Q. Did you have anything to do in connection with it?

A. Yes, I replied to Mr. du Pont's letter in the absence of Mr. Sloan.

Q. Is Government's Exhibit No. 364 your reply?

A. Yes, sir.

Q. I call your attention to the first two paragraphs:

"Referring to your inquiry of October 28th as to giving your Paint Department the General Motors forecast figures included in the Finance Committee reports.

"We prefer you to continue to consider the production figures given in the finance forecast as confidential and not make them available to your various operating departments."

Mr. Pratt, will you tell us what the basis was for your attitude in connection with this matter?

A. Well, the main thing was that the financial forecast of production did not reflect requirements for paint. There was a difference between production schedules and requirements.

The production schedules were the number of cars that we expected to produce. The requirements were issued

monthly to the supplier with estimates of what we would use in the following months.

The requirements would be different from the production schedules by the fact that we might be getting to the end of a model. This year looked like we should normally be starting the new model, but I don't know what the situation was. [fol. 3348] But when you start a new model, your requirements are a great deal more than your production schedule because you are building up stock.

When you are towards the end of a model, your requirements are very much less because you are using up what we call the "float," the stock that it is necessary to have on hand. So it was very bad practice for any supplier to think that he could judge our requirements by our production schedules.

Q. Now I call your attention to Government's Exhibit No. 367, which is a letter from Mr. Sloan to Mr. Lammot du Pont, dated November 11, 1926, in which Mr. Sloan states, in the first paragraph:

"I have no objection to your giving our schedules to Mr. Allen confidentially."

Did that come to your attention?

A. Yes, sir.

Q. Do you recall what position you took?

A. Well, I took the position that we should not give them to the du Pont Company because I felt that we were really doing them harm rather than good, to let them pass on production schedules to their various divisions that were our suppliers.

The divisions that were supplying us should have close enough contact with our divisions that they would deal with the purchasing departments and find what our requirements were from month to month rather than being guided by any production schedules on which financial forecasts were based for financing it.

Q. Calling your attention to Government's Exhibit No. [fol. 3349] 368, which is a letter from you to Mr. Sloan, a few days after his letter to Mr. Lammot du Pont, in the course of this letter you state, starting at the beginning:

"I note from your letter of November 11th to Mr. Lammot du Pont that you have no objection to Mr.

du Pont giving our schedules, as shown in Finance Committee reports, confidentially to Mr. Allen, head of the du Pont Paint Division.

"Personally I think this is wrong, as I do not feel the DuPont Company should be put in any different position whatever than other suppliers from whom General Motors is buying many times the amount we are purchasing from the DuPont Company. In taking this position it is not primarily from a General Motors' standpoint but because I feel that the DuPont organization will be a better organization for us to do business with when they realize they must stand on their own and expect to get business and hold same from General Motors Corporation on the same basis that we try to treat all of our suppliers—three considerations—namely, quality, service and price."

Then turning to the second page, the first full paragraph:

"I can not help but feel that if the DuPont Company could be made to thoroughly realize that they can expect no special consideration except what they earn through service to our Divisions, they would have established—through their contact men in Detroit—a relationship with our Divisions that would enable them to have information which would be better to guide [fol. 3350] them, from a production standpoint, than any information that could be gleaned from the reports of the Finance Committee, which may be anywhere from ten to forty days behind the true conditions at our plants."

Then turning to the last paragraph on the third page:

"For us to make it possible for the DuPont organization to get this information otherwise, in my judgment is doing the DuPont organization more harm than good, and is placing us in the position of not dealing evenly with all of our suppliers."

Now, did that letter correctly express your attitude toward this problem at that time?

A. Yes, sir.

Q. Mr. Pratt, I would like to have you state on what

basis, if any, you decided what your attitude would be toward requests made by people from the du Pont Company?

A. Well, my attitude was based on who made the request, that is, what his position was in the du Pont Company.

In the case of these exhibits, it was from the president of the company, and any action that we took would be one of establishing policy that he could pass on to his organization.

I thought that policy should be the same with the du Pont Company as for every other supplier of General Motors. There were cases where men down the line; a great many of them old time friends of mine, who came and asked for favors, wanting this information or that information. In that case, if it was something that I could give them, without, in my judgment, doing injury to the General Motors Corporation, I usually gave it to them.

[fol. 3351] Also, there was another matter that influenced me somewhat in that I had been one of the, what was called, Mr. Durant's "old boys," and I remembered Mr. Durant telling us that he wanted us to deal fairly with the du Pont Company; that the du Pont Company had been of great assistance to him when he was in very great trouble.

That was an influence with me for quite a number of years in my dealing with the boys down the line in the du Pont Company. But I did try at all times to differentiate between doing a favor for a friend and doing something that would set policies for the corporation.

Q. Mr. Pratt, it is charged in substance, in the Complaint in this case that there was some understanding or agreement or conspiracy between the du Pont organization and General Motors Corporation that du Pont was to be favored as a supplier of General Motors, favored over its competitors; did you ever know of any such understanding or conspiracy or agreement to that effect?

A. Mr. Hurd, I never heard of it.

Q. In your dealings with the du Pont Company did you ever undertake to favor them because you thought there was some right on the part of the du Pont Company to have favored treatment?

A. Never.

Q. Did you consider that because of the du Pont Company stock interest in General Motors it was entitled to treatment preferential over its competitors?

A. Never.

Q. Now, Mr. Pratt, I wish to turn to another subject, the subject of refrigerants. Before the discovery of Freon, what chemicals were used as refrigerants in household refrigerators?

A. Well, the one that had the most common acceptance was SO_2 , sulphur dioxide. Some manufacturers used methyl [fol. 3352] chloride; others use butane, and the large refrigerators used ammonia. Some machines where ammonia was dangerous, they used carbon dioxide. There was quite a variety of refrigerants, but they all had some drawback, and were dangerous.

Q. Do you know whether or not the Frigidaire ever considered using methyl chloride?

A. Yes, they talked about it for awhile. They were to build a new machine, and they thought the methyl chloride might be a satisfactory refrigerant, or sulphur dioxide, but I don't think that machine was ever put in production.

Q. Now, I want to show you four documents, Government's Exhibits Nos. 358 and 359, and General Motors Exhibits for identification Nos. 230 and 231. The first one in this group is Government's Exhibit No. 358, which is a letter from Mr. Harrington of the du Pont Company to you, dated August 4, 1926. He states:

"Mr. Robinson—"

Who was Mr. Robinson?

A. Mr. Robinson was Mr. Harrington's assistant in the Dyestuffs Department of the du Pont Company.

Q. (Reading):

"Mr. Robinson tells me that you called last Friday to find out surely who it was that I suggested to you as a source of supply for Methyl Chloride."

Do you recall what the circumstances were of making this inquiry of Mr. Robinson?

A. Yes. We were developing a new refrigerator and we were considering using Methyl Chloride, and I had talked to Mr. Harrington as to who would be a good source of that material, and this is a letter—well, I talked to

[fol. 3353] Mr. Robinson. I went to see Mr. Harrington—no, let me see. I had talked with Mr. Harrington about the source for Methyl Chloride, and I had not heard from Mr. Harrington, and I called Mr. Robinson about it.

Q. Do you recall the circumstances of your having called on Mr. Harrington for this particular information?

A. Yes. We had called on him previously.

Q. What was your occasion for calling on him rather than on other chemists or some other chemical company?

A. Well, I called on him for the information because I knew him well, and I thought he would know who would be the best supplier for Methyl Chloride.

Q. Then the letter continues:

"I believe he told you that Dow seemed to be the best possibility, and as I recollect it that is the name I previously gave you. At the present time, the only manufacturer in this country is the Roessler & Hasslacher Chemical Company. However, we feel Dow undoubtedly could make it."

That is Mr. Robinson.

"I find that Dr. Chambers has been talking to your Mr. Williams regarding possibility of your use of Methyl Chloride."

Do you recall who Dr. Chambers was?

A. Yes. Dr. Chambers was an official of the du Ponts—he had been with the du Pont Company for a long time, and one of their oldest chemists. He had been a plant manager.

Q. And it continues:

[fol. 3354] "If you have decided definitely to go into the use of this product, we would like very much to be given the opportunity to be considered as one of your suppliers."

Then the next document, Government's Exhibit No. 359, a letter from you to Mr. Harrington, dated August 10th, 1926, approximately a week after Mr. Harrington's letter to you, in which you state:

"Referring to your letter of August 4th, it is true we have about decided to use Methyl Chloride in a new

electrical refrigerator that we expect to shortly put on the market.

"Mr. Robinson told me that you were considering the manufacture of Methyl Chloride along with Ethyl Chloride, so I have asked our Delco-Light Division to make no contracts for Methyl Chloride for a period greater than one year so that we would be in a position to deal with you, if you should later decide to enter into the manufacture of this product."

Mr. Pratt, do you recall what the practice was of the corporation at this time, 1926, with reference to contracting for more than a year for products?

A. We had a rule in the Executive Committee that we could not contract for more than a year without getting special permission.

Q. Was that limited to any particular supplier?

A. No, it covered all suppliers.

Q. Now, I call your attention to General Motors Exhibits for identification Nos. 230 and 231.

[fol. 3355] Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibits Nos. 230 and 231.

(Said documents, so offered and received in evidence, were marked General Motors Exhibits Nos. 230 and 231.)

Mr. Hurd: General Motors Exhibit No. 230 is a letter to you from Mr. Harrington dated August 12th, 1926, apparently in reply to your letter which is Government's Exhibit No. 359.

He states:

"With reference to your letter of August 10th, regarding Methyl Chloride, our Dr. Krei, who is a former Badische man, is now with us here and tells us that he is quite familiar with the process used by the Badische Company for making Methyl Chloride. We have also carried out some laboratory work on this process and believe that we are in a good position to go ahead with the manufacture of this product. We would therefore appreciate it very much if you would give us an opportunity to bid on your first year's business rather than have to wait for a year before we can expect to obtain any share of it."

Now, the last document in this series is General Motors Exhibit No. 231, your reply to Mr. Harrington on August 13th, 1926, in which you say:

"I have your letter of August 12th on Methyl Chloride, and if you have definitely decided to manufacture Methyl Chloride, and you are sure that there will be no hold up in deliveries to us due to lack of experience, I have no objection to your organization contacting with our Delco-Light Company at once, and quoting on supplying them with a part of their Methyl Chloride."

By Mr. Hurd:

Q. Mr. Pratt, was there anything unusual with reference to your treatment of this subject with the du Pont Company in your opinion?

A. No, sir.

Q. Do you recall whether or not you had occasion where you dealt with other suppliers in a similar manner?

A. I am sure we had.

Q. Did anything ever come of this?

A. As far as I know, we never went into the manufacture of the refrigerator requiring Methyl Chloride.

Q. Do you recall whether you ever contracted with anyone for Methyl Chloride?

A. No, I have no knowledge of it.

Q. What was the refrigerant in use by the Frigidaire prior to the discovery of Freon?

A. Sulphur dioxide.

Q. Do you know whether or not you purchased any of that from the du Pont Company?

A. I think in the latter years we did. We had a great deal of trouble getting good sulphur dioxide. A lot of it carried moisture, and we could not use a moist product. It would corrode the machinery of the Frigidaire.

Q. Now, I want to call your attention to three exhibits, Government's Exhibits Nos. 360, 361 and 362.

Government's Exhibit No. 360 is a letter from Mr. Harrington to you dated September 23rd, 1925. He states:

"It is our understanding that in the manufacture of your refrigerating machines in the Delco System you

[fol. 3357] are using Liquid SO_2 as a refrigerating agent. We are interested to know if it would not be possible for you to purchase this from us as we have an available supply, and if so, to whom we should write to get the information regarding containers, etc. for its sale."

Government's Exhibit No. 361 is your reply, and you state:

"You are correct in your understanding as expressed in your letter of September 23rd, that we use liquid SO_2 in our Frigidaire machines, and if you are in position to supply SO_2 of the quality we require and at the right price I know of no reason why you should not be able to obtain the business. You might address the Purchasing Agent, Mr. F. L. Riehle, Delco-Light Company."

Then you go on to state:

"However, I would like to impress on you that it is necessary for us to have an exceptionally pure and dry SO_2 gas and I would not like you to consider supplying us unless you can promise an absolutely uniform product. We have had some unfortunate experiences in the past in attempting to use du Pont acid in connection with our pickling operations at Lancaster, and I would not like to take chances on repeating this by trying to use SO_2 gas. Therefore, please don't put forward the use of your SO_2 gas unless you are absolutely sure it will meet our specifications."

And Government's Trial Exhibit No. 362 is a letter from Mr. Biechler—

[fol. 3358] By Mr. Hurd:

Q. Was he the general manager of your Delco-Light Company at that time?

A. Yes, sir.

Mr. Hurd: (Continuing):

—to Mr. Harrington, stating:

“We will be very glad to have you get in touch with us regarding this subject.”

Now, I also wish to call your attention to General Motors Exhibit No. 232 which I offer in evidence.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 232.)

By Mr. Hurd:

Q. This is a letter from you to Mr. Foster, dated December 29, 1925, which is approximately three months after the prior correspondence, and it states:

“Referring to our telephone conversation this morning, we will be very glad if you will arrange that Mr. Minor or Mr. De Blois, of your department, go to Dayton, Ohio, and inspect the installation recently made at our Delco-Light plant, from a risk standpoint, for charging Frigidaire machines with SO_2 gas.

“Also, while there we would like them to inspect the installation made in our Moraine plant of the Delco-Light Company for spraying Frigidaire cabinets with Duco.

[fol. 3359] “We are anxious to assure ourselves that everything practical has been done to remove hazards of fire and health in the use of Duco and SO_2 gas. We would appreciate very much any suggestions by whoever you send as to ways or means that might make these installations more satisfactory.”

Mr. Pratt, what was your problem from a safety standpoint in the use of SO_2 gas?

A. Well, SO_2 was a very dangerous gas to inhale; it was poisonous; it was a fire risk. Mr. Foster was the service manager of du Pont Company. He had men who serviced all of their divisions, things like fire protection, dangerous operations, and things of that kind. I had talked with him, and he offered to send Mr. Minor, his fire expert, and Mr. DeBlois, his safety man. Here was something of a service that we could get that I thought we should have and

avail ourselves of, and have an inspection. The "Duco" thing was sort of dangerous from a fire standpoint in spraying it, and I wanted to see that we had taken every precaution in our plant in protecting the men that we could take.

Q. Do you recall whether or not you received any assistance from the du Pont Company in improving your safety record in the handling of this refrigerant?

A. Well, I can't say that we did—we had never had much difficulty, but we just wanted this as an added precaution. I don't remember that we had any difficulty before or after, frankly.

Q. And you mentioned that none of the gasses that were in use before Freon were satisfactory. In general, what was the difficulty with those, other than SO_2 ?

A. Well, ethyl chloride was a poisonous gas; butane was [fol. 3360] a great fire risk, and maybe also poisonous; ammonia was poisonous, and also required very high pressure to operate under, and SO_2 required very high pressure to operate under.

Q. Do you recall what the circumstances were that led up to the discovery of Freon?

A. Yes, we were undertaking to develop a new centrifugal compressor, and we also were very much—didn't want to use any of these refrigerants that had dangerous properties if we could find a better refrigerant.

So the Research Division was called in, Mr. Kettering, down at Dayton, and I was down there and we talked over with the engineers the problem to see whether we couldn't—we tried to find out what was wrong with all of the refrigerants and then to see if we could find a refrigerant that didn't have all of those troubles.

Mr. Kettering undertook to write the specifications of what we really wanted, and we sort of put the job up to him to get the proper chemist and see whether he couldn't develop something that would be more satisfactory than anything that existed.

The Frigidaire Division was to pay all of the expenses of the development.

Q. Was the research work to be done by Frigidaire chemists?

A. No, sir, it was really done by chemists, one of whom had worked for us in previous years, who had a little chemical organization, Mr. Midgley, the man who had discovered, with Mr. Kettering, tetraethyl lead, and Mr. Kettering put the job up to him on Freon.

Q. Do you recall whether he conducted his experimental work—

A. He conducted his experimental work in a small laboratory in Dayton.

[fol. 3361] Q. Was it connected with the Frigidaire plant?

A. No, it was not part of the Frigidaire plant. It was independent.

Q. Do you recall approximately when it was that Freon was discovered?

A. No, I wouldn't know the definite date. I think it was somewhere between 1928 and 1930, along in there.

Q. Just what was Freon?

A. Well, Freon was a combination of fluorine and chlorine. Chlorine was a gas that everyone considered very dangerous, and I don't think it had been used very largely in manufacture. Hydrochloric acid had a small use. Fluorine had been used, but was considered a dangerous gas to handle.

Q. When this combination of chlorine and fluorine was discovered which became known as Freon, what was the nature of the ultimate gas, the Freon, from a risk hazard standpoint?

A. Well, it turned out to be better than anyone else could imagine could be produced. It had none of the disadvantages of the other refrigerants. It was a perfect refrigerant.

Q. Was it toxic?

A. No.

Q. Was it inflammable?

A. No, it had all of the characteristics we wanted in a refrigerant without any of the disadvantages.

Q. Now, I want to call your attention to two documents that have been marked General Motors Exhibits Nos. 233 and 234 for identification, and ask if you recall these documents and the subject that they deal with?

A. Yes, I am familiar with this.

Q. At this point had Freon been discovered?

A. Yes.

Q. The first one of these documents is July 31, 1929? [fol. 3362] A. Yes. Mr. Biechler in his letter of July 31, is writing about Freon.

Q. At this time were you in charge of the accessory divisions including Frigidaire?

A. Well, I was in charge of Frigidaire. I don't know whether I still had charge of all the accessory divisions. I think Mr. Wilson came up to the central office in 1928, and I turned over to his supervision those accessory divisions which applied to automobile manufacture, and looked after those myself which were concerned with manufacturing household appliances.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibits Nos. 233 and 234.

(Said documents so offered and received in evidence were marked General Motors Exhibits Nos. 233 and 234.)

Mr. Hurd: Exhibit No. 233 is a letter from Mr. Biechler to Mr. Pratt, dated July 31, 1929, and states that it relates to the new refrigerant.

Referring to the third paragraph of the document, Mr. Biechler states to Mr. Pratt:

"You know much more about chemical manufacturing than I do, but I have been thinking about this for some little time, and we are of the opinion here that what we should do is put up a shack on some of our property at Moraine and put a few chemical men there, along with enough equipment, so that we can make this new refrigerant ourselves for the practical experience. At the present time, we are making about three pounds a day, but this of course is too small an [fol. 3363] amount. We feel since the matter is in the experimental stage, that it would be foolish for us to let the manufacturing get out of our hands, particularly when we believe we could get ready to do this for a reasonable amount of money. Mr. Midgley, in connection with Mr. Williams, Dr. Kehoe and others will work out a project, and I hope the entire subject would stay within a scope of \$50,000;"

Then referring to the next paragraph:

"Please bear in mind we are open minded on the subject, and want to proceed in the most practical, sensible and economical manner."

By Mr. Hurd:

Q. Do you recall what position you took regarding the suggestion that Frigidaire put up a small shack to experiment in manufacturing Freon?

A. Yes, I told Mr. Biechler to go ahead with his plan.

Q. Is General Motors Exhibit No. 234 your advice to Mr. Biechler?

A. That is right.

Q. General Motors Exhibit No. 234, a letter from Mr. Pratt to Mr. Biechler, dated August 2, 1929, two days after Mr. Biechler's letter, referring to the second paragraph, states:

"By all means I think we should make a set-up to produce sufficient of this chemical to prove its cost and availability for use in refrigeration machines. As to whether or not we should eventually manufacture same, in my judgment should depend a great deal on the [fol. 3364] sources of the ingredients from which it is manufactured."

Then the last paragraph:

"We would certainly look with favor on the expenditure of sufficient money to prove out what we have so far developed—as a refrigerant that would accomplish what I understand we hope to be accomplished by this particular refrigerant—would be very valuable for Frigidaire."

Do you recall whether or not this experimental plant was erected?

A. Yes, sir.

Q. Was it?

A. Yes, it was.

Q. Then I want to call your attention to two Government's Exhibits, Nos. 838 and 839.

Exhibit No. 838 is dated March 11th, 1930.

Do you recall whether or not by this time Frigidaire was satisfied that this new product Freon was a feasible refrigerant?

A. Yes, I think, as I recollect, they were satisfied that this was a satisfactory refrigerant.

Q. In this first document, Government's Exhibit No. 838, which is a letter from Mr. Biechler to you, Mr. Biechler states:

"There is one specific thing, though, we would appreciate your giving a lot of thought, because we need a decision fairly soon, and that is, the manufacture of our new refrigerant."

Now, was this before or after this test plant had been put up?

A. This was after the test plant.

Q. (Reading):

[fol. 3365] "We want to get into that as quickly as possible, and from our standpoint might say we feel that we would like to see it done by us, meaning either the Frigidaire Corporation or General Motors, or some Division you might want to set up; in other words, we feel a great deal would be gained if we would control this rather than let some chemical company do it.

"I do not know whether you have heard it or not, but we have direct information from the du Pont Company that they are launching a plan to investigate new refrigerants themselves, and we understand they are working somewhat with the same chemicals from which we have developed our new refrigerant. Because of our seeking a detector for this new refrigerant, the du Pont Company have learned somewhat of the chemicals we ourselves are using."

What is a detector for a refrigerant?

A. I think I can explain it better by telling you this refrigerant was so perfect it had no odor, and you really need an odor in your refrigerant, so if it leaks the housewife knows her machine is leaking. So we had to find something that could be put in to the refrigerant that would do it no harm and would have an odor.

Q. This thing that would have an odor would be what you call the detector?

A. That would be the detector.

Q. In other words, it is a detector for leaks?

A. That is right.

Q. Had you taken up with the du Pont Company this matter of seeking a detector?

A. No, I had not.

[fol. 3366] Q. Had you told the du Pont Company anything about this investigation at this time?

A. No, I had not. I didn't know until I got this letter that the du Pont Company was working on anything for Frigidaire.

Q. The next document, Government's Exhibit No. 839, is your reply to Mr. Biechler, dated March 15, 1930. In that you state:

"In regard to the manufacture of the new refrigerant, I am of the opinion that this should be made at Dayton in the plant adjacent to the Frigidaire plant. Whether or not it should be made by one of General Motors subsidiaries or divisions I have not just been able to determine in my own mind, and shall discuss same with Mr. Sloan, who will return in a few days."

Did you have a discussion of this matter with Mr. Sloan?

A. I did.

Q. Was it shortly after the date of this letter?

A. Yes. He was away, I think, on one of his trips.

Q. Was anyone else present when you had this discussion?

A. I wouldn't remember, but not necessarily would there be anyone.

Q. Do you recall where it took place?

A. It would have taken place in Mr. Sloan's office.

Q. In Detroit, or New York?

A. In New York.

Q. What was the substance of that discussion?

A. We decided it would be best, on account of the material used in the manufacture of this refrigerant being such dangerous materials, especially the fluorine which no one knew anything about, that we had better find a manufacturer in whom we could have dependence and that could make it and not have the experience that we had previously

[fol. 3367] had with the Standard Oil Company attempting to manufacture tetraethyl lead.

Q. What position did you take on this subject?

A. I agreed with Mr. Sloan. While I had had nothing to do with tetraethyl lead, I had been around and knew of the great troubles we had, not only in manufacture but then what we got involved in in merchandising on account of that accident.

Q. In this conference was there any discussion as to who you might approach to manufacture the Freon?

A. No. As far as I know there was no discussion. I know I felt that I had that responsibility to find somebody that I thought was satisfactory.

Q. I want to refer to the second paragraph of this letter, Government's Exhibit No. 839, in which you state:

"It is quite a fundamental step for us to start General Motors in chemical manufacture. Up to this time we have more or less elected to confine ourselves to the mechanical side of manufacture and I do not want to depart from this until very thorough consideration has been given to all the factors involved."

When you were referring to "more or less elected" in what instances had you elected to stay out of the chemical business prior to this time?

A. Well, we had never gone into it. The only one I can think of now was the tetraethyl lead. As far as I know, we only had two chemicals in my experience in General Motors that were worth considering manufacturing on our part, tetraethyl lead and Freon.

[fol. 3368] Q. And the last sentence that I read,

"—very thorough consideration has been given to all of the factors involved."

What are the factors involved to which you refer?

A. Well, the factor that I gave most consideration to was the danger of chemical manufacture in this instance.

The other factors would be raw materials, know-how, experienced men. I would say danger and lack of experienced men would be the two principal factors that would influence me.

Q. Did you give any consideration to the possible disapproval by the du Pont Company of General Motors manufacturing chemicals?

A. No, that was never a factor in our consideration.

Q. What decision did you make as to who you would have manufacture Freon?

A. I decided I would like to see whether I could interest the du Pont Company in joining in a company with us to manufacture—joining in a company with General Motors to manufacture.

Q. Did you discuss that with anyone in General Motors?

A. Yes,—in General Motors? I can't say that I did. Those kind of things I went along and tried to work out, and then came back with what I had worked out.

Q. What was the final outcome of this?

A. The final outcome of it I went to Mr. W. F. Harrington, who was in charge of the Dyestuffs Division of the du Pont Company. He was the man who had successfully worked out the manufacture of tetraethyl lead, so that it was a comparatively safe material to work with and knowing his experience, I talked to him to see whether he would be interested in having the du Pont Company join General [fol. 3369] Motors in organizing a company to manufacture Freon.

Q. What was the basis for your selecting the du Pont Company rather than some other chemical company to join with you in the formation of this new company?

A. Well, it was their experience in handling dangerous chemicals. That was the prime thing.

Another thing was I knew the people. People are very important. If you know the right people to do a thing, I think the natural thing is to go to those people and not look around much to find someone else.

Q. Was a company finally formed?

A. Yes, sir.

Q. What was it called?

A. Kinetic Chemical Company.

Q. I want to call your attention to Government's Exhibit No. 842. This is a letter from you to Mr. Robinson of the du Pont Company dated June 12, 1930, about three months after your first document we dealt with, your letter

to Mr. Biechler. I want to call your attention to the second paragraph under the heading, "Name of Company."

"We do not think the name of the company should be tied up solely with fluorine. We take this position because of the possibilities of other chemicals being developed in General Motors laboratories which we might desire to manufacture in this proposed company and which might have no relation whatever to fluorine."

Then also the following paragraph under the heading, "Purpose", next to the last line on the page:

"In addition I would like to see the charter provide that the company could manufacture any chemicals that [fol. 3370] might originate in the laboratories of General Motors Corporation."

Now, will you explain the basis for these statements; first, that the name of the company should not be limited, and second, that the purpose should not be limited?

A. Well, my idea was that here we were creating a product in which we would have a large stock interest, but that we would not have the responsibility of. And if it was satisfactory to manufacture Freon or any of the other chemicals, we wanted to have manufactured, and that the Freon Company could manufacture, why, I wanted to put them in the company for General Motors instead of having a lot of different activities.

The letter has reference to the du Pont Company's principal business being chemicals, and I wanted the charter drawn so that there would be a clear distinction that the du Pont Company had knowledge of chemicals, and to put nothing else in the company except those that involved fluorine.

Q. As to General Motors, what was your position?

A. General Motors' position was to put anything that Kinetic could or wanted to manufacture—they would be offered to Kinetic Chemical Company.

Q. Now, I want to show you Government's Exhibit No. 850 which is an agreement for the formation of the Kinetic Chemical Company.

Will you please turn to the second page, in the center of the page, paragraph third:

"Upon the organization of the New Company, du Pont shall subscribe for fifty one per cent (51%) [fol. 3371] of said total authorized capital stock and General shall subscribe for forty nine per cent (49%) thereof."

At whose suggestion was the stock to be split in this manner?

A. It was my suggestion, so far as I know. It may have come out of a general discussion, but it was what I was for.

Q. What was the basis of your being in favor of this kind of split?

A. Well, the du Pont Company had the chemical knowledge. We were organizing this company to get the benefit of their chemical knowledge. I wanted to put in people who had knowledge to have the responsibility. We had no knowledge of chemical manufacture.

Q. Now, will you refer to the next page of the same document, at the top of the page, paragraph Seventh, and drop down in that to about the middle of it, in the clause beginning:

"—it being further agreed that future chemical developments, (other than those relating to 'said products') originating in the laboratories of General, or its subsidiaries, shall be offered by General to the New Company on such terms as may be mutually agreed upon, and if after six months the New Company shall elect not to exploit such new chemical developments, then General shall be free to dispose of the same elsewhere."

Do you recall at whose suggestion that clause was inserted in the agreement?

A. I think it was my suggestion because I wanted this company to be a successful company. If it was going to be a chemical company, I wanted people who knew the chemical business to have the power to decide whether they wanted to undertake the manufacture of anything.

[fol. 3372] we should develop in General Motors, any chemicals.

Q. Do you know whether or not anything was ever turned over to the Kinetic Chemicals pursuant to that clause?

A. Not while I was active in General Motors, and I have never heard of anything since I have not been active.

Mr. Hurd: I call the Court's attention to the footnote on this same page. It states:

"Note: Penciled note '6-26-45 Cancelled per. attached JCD' is appended at mark before 'it being further agreed' in middle of Paragraph Seventh with closing mark at end of paragraph."

That was the cancellation of the clause referred to last week.

By Mr. Hurd:

Q. Now, Mr. Pratt, do you recall whether you ever gave consideration to having the Kinetic Chemicals manufacture anything besides Freon?

A. Well, I think there was a certain item that came up that I wrote Mr. Harrington about, lithium chloride, that we had not invented at all, but it looked like we might require large quantities of, and I asked him whether the du Pont Company would be interested in manufacture, because the existing manufacturing facilities were in just one company, and if we went in and developed a machine we were planning, it would require a great deal more than this company had the capacity for, and we wanted another source. I told him I did not think it was a thing I wanted to put in Kinetic, because it was not an invention [fol. 3373] of ours at all. It was just a material that we might need.

Q. Did you have some correspondence regarding this matter?

A. Yes, we had some correspondence.

Q. I would like to call your attention to General Motors Exhibit No. 235 and No. 236 for identification, also Government's Exhibit No. 852.

Is this the correspondence to which you refer?

A. Yes, this refers to the lithium chloride.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibits Nos. 235 and 236.

(Said documents, so offered and received in evidence, were marked General Motors Exhibits Nos. 235 and 236.)

Mr. Hurd: General Motors Exhibit No. 235 is a letter from Mr. Biechler of the Frigidaire Division to Mr. Pratt, dated September 28, 1931.

The first page:

"I am enclosing herewith certain information on lithium minerals about which you and I have talked several times.

"If Dr. Bichowsky's report is correct, it would seem that, relatively speaking, there is rather a limited supply of lithia mined at the present time and, accordingly, if our lithia system proves to be successful, based upon the fact that there are 50 pounds of lithia required for each 'radiator,' facilities would have to be provided for someone to make more lithia available at reasonable prices."

[fol. 3374] Then General Motors Exhibit No. 236 is a letter from Mr. Harrington to Mr. Pratt dated October 6, 1931, a week later.

"Robbie passed on to me the other day your suggestion as to our possible interest in the manufacture of Lithium Chloride. I have passed this along to Grasselli as I believe that Grasselli would be the one best suited to manufacture a product of this character."

Then the last document in this series, Government's Exhibit No. 852, a letter from Mr. Pratt to Mr. Harrington, October 10th, 1931, and states in the first paragraph:

"I wish to thank you for your note of October 6th, in regard to Lithium Chloride.

"In order that you may have a little atmosphere on this subject, I would like to tell you confidentially that we are working on an air conditioning system which involves the use of Lithium Chloride. If this system is acceptable it will require about 600 pounds of Lithium

for the average home. If we are able to sell 1,000 of these systems a year it will mean 600,000 pounds of Lithium, 5,000 systems will mean 3,000,000 pounds.

"According to the best information we have, the total Lithium production is now in the hands of the Maywood Chemical Company, who are able to produce about 1,200,000 pounds per year. Our people some time ago attempted to get some Lithium compound from your R. & H. Company. R. & H. Company I believe acts somewhat as a selling agent for Maywood, and of course if we were going to have to deal solely with Maywood there would be nothing gained by going through [fol. 3375] one of your subsidiaries to purchase material. Our people have a direct contact with Maywood.

"The thing we do not like to do is develop an industry which may take several times the amount of a given material that is now being produced and have only one source for that material. In approaching you we are hoping to be able to develop a second source for the material. Some of our people feel that we ourselves should go ahead and develop this source. Personally, I would rather depend upon the du Pont Company for our chemical developments than for us to start an independent development of our own. It was my idea that in organizing Kinetik Chemicals we could put all of our developments in that company, but it does not strike me that we ought to complicate the Kinetik picture by asking them to develop Lithium Chloride."

By Mr. Hurd:

Q. Mr. Pratt, what was the basis for your attitude that you would rather depend upon the du Pont Company for your chemical developments?

A. Well, I knew them and knew the personnel. I think that was the main reason I had.

Q. What was your reason, if any, for not having General Motors go into that business as was apparently suggested by someone?

A. Well, it was a business—it was not a new development by any means. It was a business that required mining, and just a complete new business that wasn't in line with anything we were doing.

Q. Did anything ever come of this?

A. No, nothing came of it.

Q. Did you ever use Lithium Chloride in your machines? [fol. 3376] A. We made one or two—this was an air conditioning machine, and Lithium Chloride was used to absorb the moisture of the air in the room, and then the water was evaporated out of the Lithium Chloride, and the Lithium Chloride returned to the room and absorbed more water.

It was a means of taking water out of the room, and I think we made one or two installations, but it didn't turn out to be a business, so we never asked du Pont or anybody else to make any for us because there was enough for our requirements being made by the existing sources.

Q. Now, I would like to refer back again for the moment to the contract on the formation of ethyl, and call your attention to the sixth page of the exhibit, the paragraph 12 at the center of the page.

A. Mr. Hurd, this is Freon. You said "ethyl."

Q. Yes, I appreciate your correcting me. The contract for the formation of the Kinetic Chemicals, the sixth page, in the middle of the page, paragraph 12.

Do you find that?

A. Yes, sir, I have it.

Q. (Reading):

It is agreed that the license to the New Company under the inventions, processes, patents and patent rights of the General Motors Corporation, and/or The Frigidaire Corporation, hereinabove referred to, shall be upon the condition and understanding that the New Company shall pay to the Frigidaire Corporation a royalty equal to five per cent (5%) of the selling price of all 'said products'."

Now, is that a royalty to Frigidaire for the process patents that it is turning over to the new company? [fol. 3377] A. Well, we had a patent on using Freon in refrigeration. I don't know whether we had any patent on the manufacture of Freon.

Q. What was the royalty to cover?

A. That royalty was to cover the invention on Freon.

Q. Do you recall what your intention was as to the sale of Freon to other manufacturers?

A: Well, I don't know at this time that we had made that decision, but later on we made the decision that Freon should be sold—that is F-12 Freon—which is the one we are talking about here now—should be sold to the refrigeration industry in general.

The Court: The Court stands recessed for fifteen minutes.

(Recess taken.)

By Mr. Hurd:

Q. Mr. Pratt, do you recall whether or not this contract for the formation of Kinetic Chemicals was submitted to the Executive and Finance Committees of General Motors?

A. Yes, sir.

Q. Was it?

A. Yes, sir.

Q. Now, I show you documents marked General Motors Exhibits Nos. 237 and 238, and ask you whether or not those are the minutes of the two committees with reference to the contract?

A. Yes, sir.

Exhibit No. 237 is the action of the Executive Committee, the eighth day of August, 1930, approving the contract.

Exhibit No. 238 is dated the 8th day of September, 1930, and is the action of the Finance Committee approving the contract.

[fol. 3378] Q. Were you present at both meetings?

A. Yes.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibits Nos. 237 and 238.

(Said documents so offered and received in evidence were marked General Motors Exhibits Nos. 237 and 238.)

Mr. Hurd: With respect to Exhibit No. 238, I would like to call attention to the second page, third paragraph. This is the minutes of the Finance Committee of General Motors approving the agreement for formation of Kinetic Chemicals.

It states:

"It was felt that because of the experience of the du Pont Company in the chemical field that it is to the

interest of General Motors Corporation to arrange with the du Pont Company for the commercial development and production of these chemicals rather than for us to undertake the organization of the necessary personnel, technical staff, etc. for their production; and in order to give the du Pont Company an incentive for the most efficient development of these chemicals it was considered mutually advantageous that the du Pont Company should have the right to subscribe to 51 percent of the stock of the Kinetic Chemicals, Inc. Under this agreement a royalty will be paid to General Motors for the right to use the inventions transferred to Kinetic Chemicals, Inc., as covered more fully in the agreement."

[fol. 3379] By Mr. Hurd:

Q. Mr. Pratt, after this contract was made, do you recall whether any difficulty was encountered in connection with the use of Freon?

A. Yes, sir. We had a very difficult time in 1931. There were some people whose interests weren't the same as ours, who in our judgment did not have the interest for the best of the country in mind, the people who wanted to use refrigeration.

They set up an experimental demonstration for the Fire Department in New York City where they took a charcoal brazier of very hot charcoal and poured some Freon on heated charcoal, which caused it to disassociate and make two dangerous gases of chlorine and fluorine.

This resulted in the Fire Department withdrawing their approval of Freon as a material to use in refrigerators in the City of New York.

Q. What, if anything, was done to obtain permission to sell Freon and use Freon?

A. Well, through the du Pont organization and the Fire Underwriters Association, why, it was demonstrated that this test was a very unfair test.

In a burning house, you would never build up the temperatures that was in this brazier of charcoal, and after working on it—oh, it must have been almost a year, maybe more, I don't have the length of time in my mind—why, it was

approved by the Underwriters and the Fire Department, and was reinstated as a safe refrigerator.

Q. What was the type of Freon known as which was in existence when Kinetic Chemicals was formed?

A. It was F-12.

Q. What was meant by F-12?

[fol. 3380] A. Well, I might explain it as it was explained to me. In these two chemicals, by using methane and ethane with the chlorine and fluorine, we had a series of refrigerants that had different boiling points and different pressures to enable you to have most any kind of refrigerant you wanted for any purpose you wanted, but the boys who made the invention thought that the F-12 was the best for the refrigeration units.

Q. Were these all different combinations of chlorine and fluorine?

A. Yes, sir, all of them. Some of them had methane and some ethane.

Q. What was the pressure characteristic of F-12?

A. Well, I do not remember the figures at all, but it was what they thought was the best, that the ratio between the pressure and temperature was the best for a refrigerant.

Q. What position, if any, did you take with respect to making F-12 available to your competitors?

A. Well, previous to the bad experience in New York City of condemning it as a refrigerant, we had decided that we should make it available to our competitors. We recognized we could not make all the refrigerators, and since Freon had such a great value from a health standpoint it should be available for refrigeration in schools and hospitals.

In fact, I think it had been approved by some of the schools and hospitals before this unfortunate situation in New York.

Q. Was F-12 made available to the competitors of Frigidaire?

A. Yes, sir.

Mr. Hurd: If the Court please, I offer in evidence General Motors Exhibits No. 239 and No. 240, which I do not intend to read at this time.

[fol. 3381] (Said documents so offered and received in evidence were marked General Motors Exhibits No. 239 and 240.

By Mr. Hurd:

Q. Mr. Pratt, the Government has introduced a series of documents marked Government's Trial Exhibits Nos. 853 to 857, inclusive, dealing with the subject of F-114.

What was F-114?

A. The machine that we had under development at the time Freon was discovered, we started to use at first the F-12 in it, and we found that the machine we had was not satisfactory with F-12. It had a pressure higher than we were developing, so we got the same chemists who had invented the F-12 and asked them to develop a special refrigerant out of this series they told us was available to fit this particular machine that we had so that we could go on and sell that machine while we developed a machine to be satisfactory for the F-12.

The F-12 had too high a pressure for the machine, and knowledge we had in developing the machine at that time.

Q. These exhibits relate to the dispute as to whether or not F-114 should be made available to competitors of Frigidaire. Do you recall that dispute?

A. Yes, sir.

Q. What position, if any, did you take with reference to it?

A. Well, our position was that here was a machine that we had developed. F-12 did not fit it, and we had a machine, and had at our own expense got a chemist to develop a refrigerant that fitted our particular machine, and we thought that the material should not be sold, the F-114, to competitors until our machine was perfected, and until [fol. 3382] we had some time to really benefit from our research work that we had done.

There were times—in one instance, I remember very definitely that a competitor wanted the F-114. Well, we objected to Kinetic Chemical Company selling the F-114 because it would enable the competitor to just duplicate our machine.

We had no patents on what we were developing. It was just a question of mechanical development, and our position

was we should not, or Kinetie should not, give the competitors the advantage by supplying them with F-114. We felt that if the competitive machine was not able to handle the F-12, it was up to the competitor and Kinetie to work out something that was different for his machine rather than just taking the gas that would enable him to duplicate our machine.

Q. Were F-12 and F-114 the only two possible kinds of combinations of these two gasses?

A. No, there was F-11 and F-21; there were a great many. It was my understanding there was an indefinite number that could be made, and the F-114 was developed specifically for our machine.

Q. Do you recall what position the du Pont Company took with reference to the dispute?

A. Well, I don't know that the du Pont Company took any definite position, but the du Pont directors, on Kinetie, I think, recognized our position.

It was a problem that came up pretty near at every director's meeting. I was director on Kinetie for a number of years. As long as I was there, that position was taken.

Q. What ever became of F-114?

A. When we got our machine later perfected, why, we obtained the F-114, and afterwards we went to the F-12. Before that, or about that time, I think [fol. 3383] F-114 was made available by Kinetie to the general chemical, or the general refrigeration industry, and the companies that we were having a quarrel with about it, it was offered to them and they did not want it.

Q. That is, F-114?

A. F-114. F-12 was a better refrigerant and cost less money.

Q. That was the refrigerant that you recommended be made available at all times?

A. At all times, yes.

Q. Now, Mr. Pratt, I wish to call your attention to certain portions of the Complaint in this case; first, paragraph 64 of the Complaint, in that paragraph the charge is made that in connection with the du Pont Company's expansion:

"The du Pont Company entered into an agreement with General Motors to the effect that the latter would refrain from the manufacturing of chemicals."

Do you know of any such agreement? Have you ever heard of any such agreement?

A. I never heard of such an agreement.

Q. It further states:

"It was agreed between the two companies that when General Motors made discoveries in the chemical field, it would inform du Pont Company of the findings and grant to du Pont Company exclusive development, production, and exploitation rights with respect to such discoveries."

Do you know of any such understanding?

A. I never knew of any such understanding.

Q. It further states:

[fol. 3384] "It is also understood that if any of said General Motors' discoveries were usable in General Motors operations, du Pont Company would, after their development, make them available to General Motors Company for use upon an exclusive or preferential basis."

Do you know of any such understanding?

A. No such understanding, as far as my knowledge.

Q. Now, I wish to refer to paragraph 77 of the complaint which deals specifically with refrigerants.

Paragraph 77 reads as follows:

"General Motors, pursuant to the understanding it had with du Pont Company, promptly advised du Pont Company of the discovery of the new refrigerant."

Now, you testified that you did advise the du Pont Company of the discovery of the new refrigerant. Was that pursuant to some understanding that you thought existed?

A. There was no understanding that I knew of, and this action was not in regard to any understanding.

Q. This further states:

"Du Pont Company thereupon advised General Motors that as the discovery was in the chemical field, it

should be handled by du Pont Company rather than by General Motors."

Did the du Pont Company make any such advice?

A. We had no advice from the du Pont Company.

Q. It further states that:

"The latter company acceded to du Pont Company's demands."

[fols. 3385-3392] Were you acceding in any way to the demands of the du Pont Company?

A. The du Pont Company made no demands, and we acceded to no demands.

Q. In recommending that Kinetic Chemicals be formed, to be owned jointly by the du Pont Company and General Motors, in the manufacture of Freon, were you motivated in any respect by any feeling that there was a right of the du Pont Company to have any development General Motors might make?

A. I recognized no right that the du Pont Company might have.

Q. Were you motivated in any way by thinking that you should do that as a result of the stock ownership that the du Pont Company had in General Motors?

A. Nothing influenced me but the fact that I thought it was good business for General Motors to do, a good business act, and there was no outside influence at all.

Mr. Hurd: If the Court please, that completes the direct examination.

Mr. Harris: May I proceed with the cross, your Honor?

The Court: You may proceed.

Cross examination.

By Mr. Harris:

[fols. 3393-3396] Q. You felt, did you not, when Mr. Durant left, at least a friendly feeling toward him?

A. I did.

Q. Now there were some people, were there not, in the organization at that time who, if we may put it this way, remained loyal to Mr. Durant and were not particularly happy about the change of administration?

A. Well, yes. I think I could mention two, if I had to, that occur to me, that left on account of loyalty to Mr. Durant.

I am sure there were quite a few people who were very sorry Mr. Durant left.

Q. There were people, were there not, who owed their positions as heads of divisions to Mr. Durant?

A. Yes.

Q. When Mr. Pierre du Pont came in, I take it they would not know whether they would be continued in their positions or not; that was true, wasn't it, when there was a change of administration?

A. I think that it would be the natural one, but it was not called to my attention, any conversation. Some of them did leave because Mr. du Pont came in.

[fol. 3397-3406] Q. Wasn't it your opinion too, that other things being equal, price, quality, service, du Pont should get the major share of General Motors' purchases?

A. That was my personal opinion as I expressed it several times, I guess, to individual managers, where I did not think General Motors—where that particular general manager was not giving du Pont a fair shake in the business.

Q. What would you call a fair shake?

A. Well, I felt that they should be sure that the supplier that they were dealing with was giving as low a price as they could get from du Pont. That is one thing.

Q. I thought you said they weren't giving du Pont a fair shake. I am talking about du Pont, not General Motors.

A. I would say—

Q. What would you say was a fair shake for du Pont?

A. I would think it was a fair shake for du Pont if they were giving good service, as good quality and equal price, that they should have some of the business.

Q. They should have the greater part, shouldn't they, Mr. Pratt?

A. In some instances, if it was a thing they were especially equipped to supply.

Q. Well, if it was paints and varnishes, pyroxylin finishes?

A. Well, pyroxylin finishes, I would say yes; paints and varnishes, I don't think I took any position on that.

[fol. 3407] By Mr. Harris:

Q. Calling your attention, Mr. Pratt, to Government's Exhibit No. 470, this is a letter from Lamot du Pont, who, on October 28, 1926, signed as president of the du Pont Company, and at the same time was director and Finance Committee member of General Motors.

He addresses his letter to Mr. Alfred P. Sloan, President of General Motors.

He tells Mr. Sloan that:

"Our Paint Department tell me they have developed a pyroxylin surfacer for automobile bodies which has been adopted by some important automobile manufacturers, and which, in the opinion of our men, produces better finish than the ordinary surfacers.

"General Motors and Fisher have not adopted this new surfacer, apparently because it is somewhat more expensive than what they were using. Our men are perfectly sure that they can prove that wherever Fisher builds a new plant for body finishing it is more economical to use the new surfacer than that now used, simply because the new surfacer does not require as expensive an installation in ovens, etc.

"Recalling the difficulty that was had in 'selling' 'Ducō' to the General Motors units, I am impelled to drop you a line in this case, feeling that the same inertia is acting against this pyroxylin surfacer as delayed the adoption of 'Ducō'."

[fol. 3408] Now, that is the president of du Pont writing to the president of General Motors about a du Pont product. That letter was referred to you, was it not, Mr. Pratt?

A. Yes, the record shows that.

Q. You have before you Government's Exhibit No. 471, which is a letter from yourself to Mr. Lamot du Pont, and you give him reasons, "because they believe our Research Department have developed less expensive thinners and pyroxylin mixtures."

Then you say:

"There is an unfortunate feeling in our organization that the du Pont Company never takes the initiative in bringing costs down. All lowering of cost has to be initiated by us through bringing in competition."

What does that mean, Mr. Pratt?

A. Well, I think that refers to the fact that we had been able to buy thinners at a lower cost than the du Pont Company had been selling them to us.

Q. And did you permit the du Pont Company to meet that price?

A. No, I don't think we did.

Q. Do you know?

A. I think—no, I don't know off-hand right now, but I think the Purchasing Committee records will show that we gave Industrial Alcohol an order.

Q. You gave them a six month contract, Mr. Price. I don't know if you know of the letter in which one of the du Pont people said that they in effect had served their purpose in bringing down the price, and the next six months they didn't get the contract, their price was too high.

Mr. Cox: What letter are you referring to?

[fol. 3409] Mr. Harris: I will get it, sir.

Mr. Cox: I think the witness should be shown the letter. That is the usual way.

Mr. Harris: All right. Let's withdraw it, if he doesn't recollect.

The Witness: No, I don't recollect the letter.

By Mr. Harris:

Q. Now, is it a fact, Mr. Pratt, that you did use competitors to bring down the price of du Pont products and permitted du Pont to meet the lowered price?

A. No, I don't think that was our policy.

Q. I don't ask whether it was your policy. Was it done?

A. I can't answer that. I don't know what every division did in General Motors.

Q. I am speaking now from your position as Chairman of the Purchasing Committee, which was concerned with the making of general contracts. That is right, isn't it?

A. Yes. It was not a policy of the Purchasing Committee.

Q. Would you say it was not done?

A. No, I can't say it was not done.

Q. Now, I call your attention to the last paragraph of this letter:

"Notwithstanding the above, I am calling the new development to the attention of Mr. Ed Fisher, who

has charge of the installation of equipment in the Flint Body plant, as indicated by the enclosed letter."

So that to that extent you complied with the request, did you not, of the president of the du Pont Company?

A. Well, I would have done that for any company.

[fol. 3410] Q. You did it for them, however?

A. Yes, but I would have done it for any other company, if there were something we were missing a guess on and I wanted our divisions to know about it.

Q. Then you wrote, if you will look at Government Exhibit 472, to Mr. Ed Fisher and talked about this product to him, and sent a carbon copy to Mr. Lammot du Pont, president of the du Pont Company.

Now, I call your attention to Government Exhibit No. 475, and that is a letter from Mr. Sloan to Mr. Lammot du Pont, president of the du Pont Company. Mr. Sloan is telling Mr. du Pont about the same matter that is the subject of this correspondence.

He is talking about "Duco":

"It is a case of selling most everything and it gets most discouraging at times. I sometimes come to the conclusion that a big organization like General Motors can not lead due to the fact that there is so much inertia within itself. However, that is not going to cause us to put forth any less effort to overcome the resistance."

Now, would you say from this that Mr. Sloan is telling Mr. Lammot that he will help him sell "Duco" for thinners?

Mr. Hurd: I object.

The Court: Sustained. You are asking him to interpret the letter.

Mr. Harris: Yes, your Honor.

By Mr. Harris:

Q. Now, let us take the last paragraph:

"I have gone over Mr. Pratt's reply and hope the proper department in your organization will go into [fol. 3411] the matter and if, with all the facts before you, you still feel that there are any bets we are overlooking, I would appreciate it if you would write me

a letter stating exactly the picture as you see it and I will endeavor, in a proper way, to work it along in the hopes that we can, as soon as possible, capitalize any suggestions that you may have to make."

Now, Mr. Pratt, did you report to Mr. Sloan that you had written the letter to Mr. Fisher?

A. It doesn't show that I sent him a copy, but I should have sent him a copy. I don't know whether I told him or not.

Q. Well, you would know,—and I am asking you now for your knowledge—from your knowledge of Mr. Sloan, and from your knowledge of the practices in General Motors Company, what Mr. Sloan would mean by endeavoring in a proper way to work along with the suggestions of Mr. Lamot du Pont?

Mr. Hurd: Objection, your Honor. He is asking for his opinion.

Mr. Harris: I think he has a right, if your Honor please, to say, with his close contact with Mr. Sloan, and this being a part of the same correspondence, what he would expect Mr. Sloan to do in the taking care of the business of General Motors.

The Court: Objection sustained.

Mr. Harris: All right, sir.

By Mr. Harris:

Q. Mr. Pratt, calling your attention to the next letter, [fols. 3412-3481] which is Government's Exhibit No. 476, Mr. Fisher replied to you on November 12, 1926, and told you what the trouble was, did he not?

A. Yes, sir.

Q. And then you forwarded that information, did you not, to Mr. Lamot du Pont on the 15th of November, 1926, Government's Exhibit No. 477?

A. Correct.

Q. And you stated that there was some trouble on the surface, did you not?

A. Yes, sir.

Q. And you wanted to know if other companies had that trouble?

A. That is correct.

Q. And Mr. Lammet du Pont wrote to Mr. Allen, Government's Exhibit No. 478, on the same subject, did he not, for information as to the trouble with pyroxylin undercoatings is that right?

A. The exhibit would indicate that.

Q. Then on December 17, 1926, Mr. Lammet du Pont wrote to you, Government's Exhibit No. 479, that there were no difficulties that he could find in other companies, and he went on to say:

"I am convinced that G. M. is making a mistake in not adopting pyroxylin undercoatings, and hope that you or someone else will see that the matter is given careful consideration."

Did you do anything about the request of the president of the du Pont Company to give that matter careful consideration?

A. The only consideration I gave it was to send the matter to Mr. Fisher, and Mr. Fisher's reply to me. As far as I was concerned, I do not think I had anything more to do with it.

[fol. 3482] CHARLES F. KETTERING, called as a witness on behalf of the defendant General Motors Corporation, having been first duly sworn, was examined and testified as follows:

Direct examination.

By Mr. Carpenter:

Q. Where do you reside, Mr. Kettering?

A. Dayton, Ohio.

[fol. 3483] Q. Will you tell the Court when and where you were born?

A. I was born on August 29th, 1876, at Loudenville, Ohio.

Q. You have been a Director of Research of General Motors for some years, up until your retirement, have you not?

A. Yes, sir.

Q. When did you retire?

A. About seven years ago.

Q. Will you tell the Court where you attended school and college?

A. Ohio State University.

Q. And before that?

A. I went to the public school at Loudenville.

Q. And do you recall the date that you were graduated from Ohio State University?

A. I think it is 1904.

Q. What degree did you obtain?

A. A degree of mechanical engineering.

Q. And in the course of your studies there, did you take courses in chemistry?

A. Yes, I did.

Q. In physics?

A. Yes.

Q. After graduation, where did you first seek employment?

A. I went to the National Cash Register Company.

Q. In what capacity?

A. As an engineer in charge of their electric development.

Q. And was there anything that you accomplished there that was different from what had been accomplished before?

A. Well, we put out the first electrically operated cash registers, and that was a problem because of the fact that they had to go all over the world, and we had a lot of different kinds of current; so to get as near a universal motor as could be without effecting the speed of the cash register was quite a little problem.

[fol. 3484] Then I later developed a lot of their present line of registers.

Q. I should ask you if you are a member of any learned societies.

A. Well, quite a lot of them.

Q. Well, would you name some of them?

A. Well, the American Society of Automotive Engineers, chemical societies, physical societies, civil engineers—well, a dozen or more of them, I guess.

Q. I see. Have you received any honorary degrees in the course of your career?

A. Yes, I have a few.

Q. Do you recall how many?

A. No, I imagine twenty-five or thirty.

Q. Now, after you worked at the National Cash Register Company and developed their electrically operated cash registers, what did you do then?

A. Well, I left there and started a little organization of my own for the purpose of putting self-starters on automobiles.

Q. Where did you do that work?

A. I did that in a barn.

Q. Down in Dayton?

A. In Dayton, yes.

Q. And did you perfect the self-starter?

A. Yes, we developed it.

Q. And do you remember when that was first put on an automobile?

A. We put that on in the fall of 1914. That was for the 1912 model. I have forgotten just what—it was, I imagine, around in October of 1911. It was called a 1912 model.

Q. Model of what car?

A. Cadillac.

The Court: Keep your voice up a little higher, Mr. Kettering.

[fol. 3485] The Witness: Yes, sir, thank you.

By Mr. Carpenter:

Q. Prior to the self-starter being put on cars, they were all started with a crank, were they not?

A. Yes, that was the only way you had to start them.

Q. How did you come to get your self-starter on the Cadillac car first?

A. Well, Mr. Leland who was then president of the Cadillac Company had a friend by the name of Carter who had—who was the developer of a friction drive automobile, and he was driving across the Belle Isle Bridge and a lady, driving a Cadillac, stalled her car and Mr. Carter got out to crank the car, and the starting handle hit him in the jaw and broke his jaw. He was a great friend of Mr. Leland's, and so much so that Mr. Leland felt he had to get starters

on the car. And he was on the market so far as to take a look at the self-starter.

Q. And after he took a look at it, did he put it on?

A. Yes, we put it on in the fall of 1911.

Q. Did you have any difficulty getting the self-starter adopted by other makers of automobiles?

A. Not too much, because Cadillac made 12,000 cars the first year and they were pretty good for a new device and then our business improved terrifically on the strength of that because—so we didn't have too much difficulty, no.

Q. You also developed, did you not, the battery ignition for automobiles?

A. Well, that had to go along with the self-starter, because we had to take the place on the automobile where the magneto was usually put for the self-starter; so the battery ignition was almost imperative, if we were going to have a self-starter at that time, because the engineers didn't want to change the car or change the engine, so we had to get on the best we could.

[fol. 3486] Q. Now, the magneto was manufactured by whom in this country?

A. Well, there were several American manufacturers, but the leading magneto at that time was the Bosch magneto made in Germany. They may have had an assembling plant in this country.

Q. Did you have any difficulty getting your battery ignition and self-starter out into the public because of the magneto?

A. Well, there was a lot of discussion at that time about magneto ignition being better than battery ignition, because the only battery ignition they had before this time was dry batteries, which had not been very good. We had more trouble with the engineers on the ignition than we had with the self-starter, because at that time nobody understood the ignition at all. There were all sorts of ideas. The electrodes and different spark plugs were made out of different materials, and one wanted a red spark plug and one wanted a blue spark, and one wanted a green spark, so that was simply a function of the spark plugs.

The next thing is that they had the idea that you couldn't get as much power out of the battery ignition as you could out of the magneto which we had proven many, many times

wasn't so, and so we had all of the prejudices and every thing against the old battery ignition, and that carried over into ours.

Q. When did you first observe the knock in an operating engine?

A. We first observed the knock in the first engines in the Cadillac—well, we didn't observe it. It was brought to our attention here in Chicago.

A paint company had bought several Cadillacs with self starters on them, and they were using painter's naphtha for fuel. It is a material they use for thinning paints. [fol. 3487] Of course nobody knew then, but they attributed it to the fuel as having something to do with the knock in the engine. We came up here and saw what they were using, and got them to use a better grade of gasoline, and that took that out.

Q. Did you have any opposition from the magneto manufacturers?

A. Well, they tried to say that the reason that the knock came in about that time was due to the fact it was battery ignition. We had to make a lot of demonstrations to show that that was not so.

Do you recall any in particular?

A. Well, we had one case in Pittsburgh, I believe it was the McAllister Brothers, who were the dealers in Pittsburgh. They were going to cancel their contracts for Cadillac cars if we didn't put magnetos on them.

Of course, everybody was very much worried about that; so we went down there. They drove these tests. They had a magneto on, had improvised a magneto on this car, and in the forenoon they drove up these hills all right on the magneto and failed every time on the battery.

So, while they went out to lunch, I reversed the wires on the switch, and in the afternoon the fellow drove up just as well, but always the lever had to be on the magneto side. When it was, he went up, and when it was on the other side, he didn't go up.

So they wanted to know what we were going to do, and we said we couldn't do anything because it was purely in the driver, and not in the car. Then we found out later that some of these fellows were paid to try to discredit the battery ignition, but this completely washed it out.

Q. You mean, you switched the wires?

A. I switched the wires while they were at lunch so when [fol. 3488] it indicated that he was on magneto, he was on battery, and when he was on battery, he was on magneto, and he drove up just as well when the lever was on the magneto side in the afternoon as he did in the forenoon.

Q. Did you ever do any work on the lighting of farm houses and so forth?

A. Yes, we developed what is known as the Delco light.

Q. Where was that developed?

A. That was developed in Dayton. We set up a little separate company for that, and that was brought about—we had no intention of going into that thing, but after the first Cadillac cars were out on the market, we began to get calls for duplicate sets. They wanted to buy a complete self-starter set, and we found a good many of these people had fishing camps, and they would light their tent from the automobile. But if they drove to town with it, they didn't have any lights, so they wanted a little engine to run a little generator to make lights when they were there.

So we said if they really wanted a light, that was about the poorest way to do it, because that device had been designed entirely as an automotive thing.

So we designed a little engine generator and built many thousands of them.

Q. They were sold all over the United States, were they not, before they had electrification throughout the farm areas?

A. I think it was one of the predecessors of the present rural electrification.

Q. Now, when you made these small engines for the Delco light business, with what fuel were they operated?

A. We started on gasoline and then the insurance people ruled against it, especially if the engine was in a house. [fol. 3489] They ruled against the gasoline, and so we modified them slightly to run on kerosene because that was permissible in a house.

Q. Did you make any observations as to the operation of those engines when you used either gasoline or kerosene?

A. Well, they wouldn't start, of course, on kerosene so we devised a little priming, just an old fashioned oil can, primed them a little bit with gasoline to get them started.

One of the most interesting things we observed was that where the engines were not in the house, but, say, outside, subjected to the cold, at that time there was a theory that you could not run a kerosene engine without super heat on the intake manifold.

We found the first winter we had these out that they ran better when it was cold than they did when it was warm, and that seemed to us to be rather a paradox because everybody thought of it the other way. But you remember this was a single cylinder engine, so the question of distributing the materials was not involved, and of course the engines would knock some in the summertime, but in the winter time they did not. That was really the thing that started us on trying to analyze the cause of so-called knock or detonation in engines.

Q. Did you buy or get any instruments with which to attempt to measure the knock?

A. Well, I had some instruments that I had bought about, I imagine, 1912 or 1913. A friend of mine had come over from England, and brought over an engine indicator. It was called Dobie & McGinnis manograph.

It was a type of modified indicator that they had developed for gas engines, and I used that, started to do some work on it, and our business grew so rapidly that I had to put the whole thing aside. So I put the manograph, the [fol. 3490] papers and the test data that I had taken myself, put them in a box and screwed a lid on it, and set it in the closet.

Q. Did you make any public addresses on this subject of the fuel knock you had observed with your Deleo engines?

A. Well we may have, yes. In other words, we weren't trying to keep it a secret, at least.

Q. I call your attention, Mr. Kettering, to defendants' Exhibit No. DP 93, a letter from you to Mr. Frederic W. Kurtz of the du Pont Company, dated April 20, 1916, in which you refer to a talk which you had given at Cleveland, and you said, the second paragraph:

"We are doing a little investigation work here on quite a number of types of fuels, but have nothing which would be of any definite value to anybody. I will be very glad to keep you in touch with this thing, and any time we get anything of interest we will be

glad to give you the benefit of it. We are doing this more from the standpoint of acquainting ourselves with the problem, than with the idea of commercializing either the apparatus or the fuel."

What did you mean by saying if we get anything of interest we will be glad to give you, the du Pont Company, the benefit?

A. You see, we weren't in the fuel business. We were in the engine business, and we were trying to get anybody that would help us on the fuel end of it to get whatever help we could. That talk—I think that was made before one of the engineering societies in Cleveland, and you see, what we were trying to do then, it is pretty hard to realize today with all of our information and interest in fuels, that at that time nobody regarded gasoline as being anything but gasoline, and it was all on specific gravity.

[fol. 3491] As I say, gasoline was gasoline. Kerosene was kerosene. That it had any other factors or any other properties was not known. This was the first time that we began to evolve that these fuels did have other properties of much greater importance than the specific gravity or heat units.

Q. At the time of the writing of that letter, were you in the employ of General Motors?

A. No, I was employed in General Motors in that I was running the Delco plant, but this work was not done in Delco. It was done in the Delco Light Company which was not associated with General Motors.

Q. Now, did you determine somewhere along about this period to set up a research organization to make a study of this fuel problem?

A. Yes, I set it up in this way: in building the Delco Light, one of the things that was desirable was an easy way for a man to tell whether he was right, and we had worked out a little scheme of balls of different densities. We set it up with the idea of the three in there, that is, one would drop when the battery was one-quarter discharged; another would drop when it was half discharged, and the third would drop when it was three-quarters discharged.

And we finally compromised by having two, one dropping

after a third discharge, and the second dropping when it was two-thirds discharged.

We needed to do some work, and we got Thomas Midgley, who did work with one of my associates, and we got him because we had been working on hydrometers in Columbus, Ohio. We got him to take this problem up, and I had it in pretty good shape, and it took him only a few months to finish it up.

[fol. 3492] Q. By the way, was Midgley a chemist?

A: No, he was a mechanical engineer from Cornell.

Q. He graduated from Cornell?

A. Yes.

Q. What followed his employment in working on the hydrometer?

A. After we finished that up, I think it took a couple of months, then he came to me and said, "I have got that job done. What do you want me to do now?"

In the meantime, while we were working on this, I had talked to him about this fuel thing, because it looked to me as though it was a very important thing, and I said, "If you go over in my office in the Delco, there is a box there. You get the box out, and open it up, and you will find in there some instruments and some tests that I ran and some printed material. I wish you would take a look at that to see what you think of it."

I said, "I think we ought to find out what makes an engine knock."

So that was the beginning of the so-called fuel research, and we took one of our little engines; he got a new head made for it so that he could put this indicator on it. I had used a beam of light by which you could observe, but we wanted to get a picture of that thing, so we built like a little telephone booth in the corner of the room, and a kind of material known as beaver board, and I rigged up a tomato can and we put little pieces of plaster lath with shingle nails, and we wrapped a piece of sensitive paper around it and got our first picture of what detonation or what knock was. Of course, it was a great surprise to everybody because nobody had thought of it.

Q. What did that picture you got from operating the engine show?

A. It showed that it was not the pre-ignition, as every-

body thought it was, but it came off quite a bit after the [fol. 3493] spark had gone across the spark plug, and the fuel had started to be burned. Then after it burned a little bit, it took on a second rate of burning which was about 100 times faster.

Q. Could you illustrate on a sheet of paper what that looked like? I have one of the cards here, but it is not very plain. And it does not show.

A. I am trying to think how I can show this without getting into any technology. As your piston goes up, it compresses the mixture. The compression goes up like this (indicating), and somewhere in there the spark goes across, then this pressure rises. This would be a normal card, then it goes right back down like that.

Now, this is the engine knock. It goes up the same way, then in about here (indicating) the pressure rises very rapidly, and then it comes back down, and goes a little lower than that the second time. Sometimes it would be shortly after the spark and sometimes very late. We have had some cases where it went through the top center before this second rise of the pressure came in.

It was an entirely unexpected thing so far as we were concerned, but we later on found that it was fairly well known in a number of places in the world. In the mining industry, they had the mine explosions, and they had observed the same thing, that a mine explosion starts up very slowly, then it develops very rapidly.

Q. Prior to the time you took the picture of an operating engine, what had been the theory about what caused the knock?

A. Well, they always figured that it was due to the carbon getting hot, and igniting the engine before it got—

Q. You mean igniting the fuel.

A. Igniting the fuel, yes.

[fol. 3494] Q. Is that called pre-ignition?

A. That is called pre-ignition, but the idea was that the ignition was normal; the combustion started out normal.

Q. That showed that the knock occurred after the spark entered the engine?

A. Not before.

Q. And that caused the hammering that everyone is familiar with?

A. Of course, we proved very much later it was the impact of the gas in the cylinder that was causing the knock. It sounded like a hammer on the inside of the engine.

Q. Now, following the taking of the picture, or a series of pictures, what did you and Midgley do?

A. Well, when we saw that, we wondered if it would be possible to add something to the fuel that might modify it. We had a theory, and every time an engine knocked, we had a little puff of black smoke out of the exhaust.

When the fuel started to burn, there were little particles in there, and they could not evaporate fast enough; consequently you burned the hydrogen part of the fuel, but not the carbon, so I thought it would be a good thing if we colored the fuel red, because red absorbs light very much more rapidly than the clear material; so we colored some of the kerosene red with elemental iodine.

Q. Why did you use elemental iodine?

A. It was the only thing we had. This was on Saturday, and I spent most of my Saturdays on this job; so we got in some elemental iodine, and it went into solution very well, and it helped the knocking tremendously; so then on Monday morning when I came downtown, I stopped at a big wholesale drug company there and got a lot of aniline dyes and we added that to the fuel, and that did not help [fol. 3495] any. Then we found that it was the iodine itself and not the coloring that was important. Then we made some iodine compounds which we called ethyl and methyl iodide. They were perfectly clear materials, but they seemed to help.

That was really the first time we had anything that modified the combustion.

Q. About what time was that, Mr. Kettering? Was that before or after or during World War I?

A. I think it was just before World War I.

Q. During World War I, did you continue your studies of the knock?

A. We were doing something in connection with the Air Force in trying to get them some fuel, and we also were on this job of developing the first one of these aerial torpedoes. They call them guided missiles now. So I had to put most of my group on that, but we did continue to work in connection with the Naval Consulting Board of which

Thomas A. Edison was the head and Dr. Bakeland was vice president.

Q. By the way, did you succeed in perfecting an aerial torpedo?

A. Yes, we did. General Arnold, who was the head of the Air Force in the last World War, was commissioned to take it to Europe. He got sick on the way over. I think it was pneumonia. By the time he got there, the Armistice was signed.

Then he went to see General Pershing, and he told him to go back and keep up that project, keep it alive, because it was a good thing to do.

Q. Did you have anything to do during the first World War with the liberty engine?

A. Yes. We developed the ignition and the electric system for it.

Q. Now, following World War I, Mr. Kettering, did you continue your research on the knock in your laboratories?

A. Yes, we started in again. Of course, as I say, we had [fol. 3496] been working somewhat on it during the war, because we were very much in need of a better fuel for aviation engines, and we had heard by the grapevine that the Germans were using a material which a chemist recognizes under the name of cyclohexane, and another name that the chemist uses for it would be hydrogenated benzene, and they had attempted to make that at Columbia University, I believe, and had not succeeded very well, so we talked to Dr. Bakeland one day. He said nobody in this country could make that material. We said we would not worry about that; that we thought we could make it. He said, "I don't think you fellows know enough about the thing to even try it."

So we set up a little operation and it worked just the way he said it would. It would start out very nicely and within an hour, it would completely stop. So we said there must be something in the benzene itself that is causing the trouble; so we set up a little experiment which we were going to run all night. We had a fellow watching that experiment by the name of Shorty Wells. He was volunteering his services for work during the war. Shorty took a few readings. Then he went to sleep, because the thing ran all night. It didn't make any racket at all, and that little hydrogenated

tion apparatus was in a place, I should say, about the size of four telephone booths; I should say, about six by six, perhaps six feet by six feet. The next morning when we opened the door, we could smell this hydrogen sulphide, that is, the smell of rotten eggs; so we said to Shorty "you have done a wonderful thing", because when we opened the door, we recognized there was some sulphur compound material in this benzene.

[fol. 3497] So then we made up a new hydrogenation apparatus and put that barrel of fuel running during that night through a new furnace or through a new hydrogenation tube, and that went very very well. That went with something like 96 per cent efficiency. That was quite simple.

All we had to do was put two or three of these things in a series and pass the benzene through one and then through the other. We took out the sulphur first, and the fresh catalyst that we had was always protected by going through several of the others. Doctor Bakeland said he would give us a medal if we could produce a liter of cyclohexane; so, when we opened the Engineers Club at Dayton, we gave him a quart of the material, and we said, "This is a quart out of 300 barrels." It was a very much better fuel than anything they had had.

Q. Did you make a synthetic fuel or put one on the market about that time?

A. Yes, that was just for the Air Force. Now, the trouble with the hydrogenated benzene was that it would solidify at about 30 degree Fahrenheit, but if you took 60 per cent of that material and 30 per cent of the original benzene, you got a material that would not solidify, I guess, until quite a little bit below zero; and we gave that a name called "Hector."

And that was used experimentally by the Air Force. But you should remember at that time nobody understood what the fundamental requirements of a fuel were, and the idea that crude oils from different parts of the country could produce a more suitable fuel for aviation was not known. We recommended two or three different types of fuel made from different crude oils. The Government thought we must have been interested in those particular things, but later they found out we didn't have an interest in it; but now everybody knows that.

[fol. 3498] That is so common now that you wouldn't even mention it.

Q. Did your laboratory make any other discovery or discoveries, or discover another anti-knock compound following iodine?

A. Well, as I say, we had been working with benzene, and then there was a lot of derivatives of benzene, like xylidine and pyridine, and so forth.

We tried those out, and some of them were pretty good.

Q. What was the next compound?

A. The last we tried was aniline which was a modification of that same material, and that was pretty good.

Q. Did you have any instruments by which to measure the effect of the fuel?

A. Well, we had a Dobie & McGinnis manograph, and we had modified that, but we had a pretty good way of calibrating the same.

Q. And did Midgley produce any instrument?

A. Well, he modified the Dobie & McGinnis manograph into a thing we later called the Midgley indicator, but the difference between the original indicator and Midgley's was that his was built with a light-tight box so you could put in a roll of photographic film and take a number of exposures.

Q. Did you, in the year 1919, deliver a paper entitled, "The More Efficient Utilization of Fuel"?

A. Yes, I did that before the Society of Automotive Engineers.

Q. And in that paper you told about the discoveries when the knock occurred in the fuel?

A. I had discussed it a little bit the year before at the corresponding same meeting, and I believe that meeting was at the Astor Hotel in New York, and so then I was asked by the Society to present it as a formal paper, and that was in 1919.

Q. Following that paper, did you have a call from anyone?

A. Yes, we had Mr. Frank Howard, who was then with [fol. 3499] Doctor Burton here at the Standard Oil of Indiana, and he came down and they had read the paper, and they were quite upset about it, because Mr. Howard said, "I want to be perfectly frank with you."

He said, "Doctor Burton wanted me to come down and see you and find out whether you ought be in an insane asylum or in jail."

Q. By the way, who was Doctor Burton?

A. Doctor Burton was then head of the Standard Oil of Indiana, and the man who developed the first cracking system, I believe, or was among the first.

Q. That was called the Burton-Clark cracking process, was it not?

A. Yes, and Mr. Clark later went to the Standard Oil of New Jersey.

Q. When Frank Howard came down and told you that, what did you do?

A. Well, I had to go to Springfield that day because the Robbins & Meyers in Springfield were making a lot of electrical equipment for us, because, you remember, I was trying to make self-starters, and I say that business was growing very fast. So I turned Mr. Howard over to Mr. Midgley and told him to show Mr. Howard what we were doing. We had a couple of these little Delco light engines running. When I got back about 3:00 o'clock in the afternoon, I said to Mr. Howard, "Have you decided which place I am to go?"

And he said, "You are working on things that the oil industry knows nothing about. This is entirely a new point of view."

So I didn't go to either place.

Mr. Carpenter: Now, if your Honor please, I offer a letter from Frank A. Howard to Mr. E. M. Clark dated April 16, 1919, General Motors Exhibit No. 242.

(Said document, so offered and received in evidence, was [fol. 3500] marked General Motors' Exhibit No. 242.)

Mr. Carpenter: As I said, this is dated April 16, 1919, and I will read just a little of it:

"For some time automobile engineers have been discussing the investigations which are being carried on in the laboratory of the Delco Company, at Dayton, Ohio, on the performance of various motor fuels. As Mr. Wiles and I told you some time ago, it was reported that the Delco Company had discovered that the so-called 'pre-ignition knock' in gas engines was in

reality a detonation which might occur some time after the piston had actually passed top dead center; in other words, that it was not pre-ignition at all.

Q "In the April number of the Journal of the Society of Automotive Engineers which just reached me yesterday, I find a paper by Kettering, President of the Delco Company, giving the high spots of this work which are briefly as follows:"

Then he states the high spots and says this, on page 3, paragraph 2:

"I am bringing this to your attention at the earliest moment because I think that unless the fuel producers themselves get into this work of investigating the properties of their fuels, there is a good chance that they may have to pay tribute to others. I believe that a gasoline which, by the addition of a few per cent of some agent, such as the ethyliodide found by Kettering, would not knock in a dirty motor, would easily [fol. 3501] bring five cents per gallon above the market and that there would be such an insistent demand for it that any oil producer who had exclusive rights could absolutely dominate the entire motor-fuel market."

And two paragraphs below:

"I also believe that these developments indicate the supreme importance of proceeding with the establishment of an experimental engineering department capable of attacking this problem."

Q. Following Mr. Howard's visit—

A. We showed everything we had up to that time.

Q. Did any other Standard Oil representatives come to see you?

A. Yes, I think they did. I imagine from that letter of Mr. Howard's a couple of fellows came up from Standard Oil of New Jersey. Mr. Howard was still in Chicago at that time.

Q. Did you show these men from the Standard Oil of New Jersey what you had and what you were doing?

A. Sure.

Q. Do you remember their names, what their position was?

A. No, I do not.

Q. One was their chief chemist and the other chief engineer, were they not?

A. Yes, but I don't remember their names.

Q. Mr. Meacham and Feike?

A. Yes.

Mr. Carpenter: I hope you don't mind my leading the witness, Mr. Harsha.

Mr. Harsha: Not at all.

By Mr. Carpenter:

[fol. 3502] Q. Following that visit, do you know what the Standard Oil Company did?

A. Well, I think they got Mr. Howard to come down from Chicago and start a research laboratory which was later known as the Standard Development Company. You see, they had research in the oil industries as to production, but there had been very little work done on the utilization, which this was. This was a new phase of the oil industry or gasoline industry.

Q. Do you remember delivering an address on "Consumption—the Automotive Industry" that was printed in the bulletin of the American Petroleum Institute in December, 1920?

A. Yes.

Mr. Carpenter: I would like to offer G.M. Exhibit No. 241, which is an excerpt from that address.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 241.)

Mr. Carpenter: I only wish to read a small portion of it. Paragraph 2, page 1 reads:

"In order to get to you this problem as we see it: here is what happens: If we try to burn the present-day fuel which is sold at the average filling station in a high compression engine, we will say, like an automobile engine, we cannot do it—"

The Court: Like an airplane engine.

Mr. Carpenter: Like an airplane engine. Thank you, sir.

"We cannot do it. We cannot fly. It is almost impossible to get off the ground if you have to fill your [fol.3503] machine with ordinary automobile gas. The reason is that we get that awful knocking in the motor. Most people call it a carbon knock. I will tell you what it is a little later on."

The concluding paragraph on page 5:

"If you can raise the compression of your motors you can do a lot of things. You can increase the economy. You can do things to keep out crankcase dilution. You can do things for distribution. You can do a lot of things that we cannot do now. But it is such a big task because of the fact that we cannot do these things that we want to do in the automobile engine until we get the proper fuel work done, and we have difficulty in getting the fuel work done until we can get the engine to do it. So we have to carry this movement on together as a coordination between the American Petroleum Institute, the automotive industry and the chemical societies, because it is possible, and we know enough today in a good many ways to help this situation out."

By Mr. Carpenter:

Q. Following that, Mr. Kettering, did you have any contacts with the chemists of the du Pont Company?

A. Well, yes, we had had some contact with the chemists of the du Pont Company during the war in furnishing of dopes and things like that. Of course, we knew them as members of the American Chemical Society.

Mr. Carpenter: I now offer a letter—the signature isn't here—but it is addressed to Mr. John Marshall, manager of Miscellaneous Division, Eastern Laboratories, du Pont [fol. 3504] Company, Chester, Pennsylvania, dated August 15, 1919, as Exhibit GM 243.

The Court: It would be more helpful if you would give the exhibit number first before identifying it.

Mr. Carpenter: Thank you, sir, I will do that.

(Said document so offered and received in evidence was marked General Motors' Exhibit No. 243.)

Mr. Carpenter: I will read just a little of this. The first paragraph:

"Dear Mr. Marshall:

"I am enclosing herewith a list of the materials which have been tried in this laboratory for their effects in suppression or elimination of the kerosene knock. It seems best for us at this laboratory to make a thorough study of the effects of the homologues of aniline on knocking fuels.

"The materials that we want to study immediately are as follows—"

And he lists fifteen.

"We shall appreciate it if you will send us as many of these materials as you may find it convenient to obtain. Any information you may be able to supply about the best method of preparing such of the compounds as you do not have available or intermediates for the preparation of such compounds will be of very great assistance to us."

[fol. 3505] Then, next to that, is a long list of materials, some 120 in number, seven of which stopped the knock; 33 had no effect; 2 stopped the motor; and others induced the knock.

By Mr. Carpenter:

Q. Do you recall, Mr. Kettering, who signed that letter?

A. I think Mr. Midgley signed that letter—either Midgley or Dr. Clements.

Q. Do you recall an incident that happened just before that letter was written?

A. I think some of the du Pont boys came out to look at this work that we were doing. So we took advantage of that by asking them to help on the thing.

Q. At whose invitation did they come, or how did they happen to come to your laboratory?

A. I think we asked them to come out.

Q. Do you remember who the men were?

A. No, I do not.

Q. Was this John Marshall one of them?

A. Yes, he could have been.

Q. Now, at that time, the time of the writing of the letter, was your company a part of General Motors?

A. No, nor was our laboratory a part. Our laboratory was not a part of General Motors.

Q. You were doing this as the Dayton Metal Products Company, weren't you?

A. Yes. I think you should know that shortly after we started this work, it was transferred from the Delco Company to the Dayton Metal Products Company.

Q. About what year was that?

A. I imagine that was around 1916 or 1917, because that is when the military work started, and the Delco Company didn't want to do that, and so we transferred it. If [fol. 3506] was taken over by the Dayton Metal Products Company.

Q. So that this work on all of these compounds that are listed on the sheet annexed to that letter which I read were tested in the laboratory of the Dayton Metal Products Company?

A. Yes. And they were tested on the small Delco light engines. We had quite a number of them.

Q. Why did you call and invite these du Pont chemists out to see what you were doing?

A. Well, because we were not interested in trying to get the fuel as a product. We were trying to get the fuel as a part of an engine, and consequently we invited anybody that we thought could help us.

Q. You thought that these two chemists might be able to give you some help?

A. Yes.

Q. Did you get these materials or some of them?

A. Some of them we did, yes.

Q. How long did the work that you were doing on those compounds, which were all aniline derivatives, were they not?

A. Yes.

Q. How long did that work continue, Mr. Kettering?

A. I think it continued up to around 1920 or 1921.

Q. Did you ever get to the point where you considered putting aniline on the market?

A. Yes. We were going to try it out locally, at least. Of course, it has some very, ~~very serious disadvantages~~. It had a bad odor, and it was a good paint remover, so you had to be very careful.

We had one old car there that we had raised the compression of the engine so as to get some advantage of this aniline, and it was a very good performer but it smelled [fol. 3507] so bad and climbed the hills so well we called it "the goat."

That was about the first road test that had ever been made on a modified engine.

Q. What did you decide to do about aniline?

A. Well, we decided not to do it then because the quantities weren't available to any great extent, so we dropped that. I believe it was about that time that our boys felt that they had exhausted this entire field, and they came to me and said, "Now, we want to quit; we want to get off this job."

Q. Before we get into that, Mr. Kettering, I would like to ask you this: Following that letter that you wrote to John Marshall about those aniline compounds, were you approached by Walter Chrysler with a proposition?

A. Yes.

Q. What happened?

A. You see, Walter was with General Motors at that time, and of course I knew him. I had worked with him when he was at Buick, and he was Mr. Durant's assistant at that time.

So he came down and talked to me about the probability of—you see, I was chief engineer of three companies in Dayton, and I had a part interest in them: He wanted to know if it wouldn't be possible that he could buy us out and I would take the top men of these different organizations and start what was later General Motors Research Company.

Mr. Carpenter: I offer in evidence now General Motors' Exhibit No. 244, a letter from Mr. E. H. Kelly of General Motors Legal Department, to Mr. W. C. Durant, New York City, dated December 23, 1919.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 244.)

[fol. 3508] Mr. Carpenter: This Exhibit reads:— "Re: Dayton Metal Products Company, Dayton Wright Airplane Company."

"The transaction for the purchase of 60,000 shares of the Dayton Metal Products Company was consummated at Dayton on December 19th, 1919. At that time there were delivered to Harry E. Talbott, representing himself and associates, common and debenture shares of General Motors Corporation stock as per list attached.

"There was received certificates of stock of Dayton Metal Products Company in the number of 60,000 shares, issued to General Motors Corporation."

By Mr. Carpenter:

Q. Were you one of the associates that Mr. Talbott referred to there?

A. Yes, sir.

Q. Following the consummation of the merger, did you become an employee of General Motors?

A. Yes. I was a part employee of General Motors when I was still running the Delco plant. There were three companies involved, in the last merger; Dayton Metal Products, Dayton Wright Airplane, in which Mr. Talbott and myself were the owners, and then the Delco Light Company, in which Colonel Deeds and I were the principal stockholders.

That came into General Motors at the same time these two did, so that all of the interests that I had then, the independent interests in Dayton, were taken up by General Motors, and we organized then the General Motors Research.

Q. When you came into the employ of General Motors [fol. 3509] following that merger in December 1919, what position did you have with General Motors?

A. Well, I was Director of Research.

Q. As Director of Research, did you come in contact with Mr. Durant?

A. Yes, I did.

Q. Did you make any investigations of any other General Motors properties for him?

A. Yes, a few of them.

Q. Can you tell me whether you investigated the Samson Tractor Company?

A. Yes, that was up here at Janesville.

Q. Tell his Honor what you discovered?

A. Well, the Samson Tractor Company, I believe, was its division name. Mr. Durant used to go out to California in the winter time, and of course, there are inventors around every place, and he had bought several tractor patents.

They were making two kinds of tractors up there. One was known as the Samson Tractor, which was not materially different in structure to what our farm tractors are today.

Then they had another one called the "Iron Horse" which was a specialized tractor that you could hitch to any horse-drawn vehicle, and you drove it with a pair of reins the same as you did a buggy.

They had claimed a lot of things for it. The engineering had not been very well done. The manufacturing wasn't too good. So we recommended the discontinuance of the manufacture of tractors.

Q. Did you have any experience connected with Kansas City in connection with that tractor?

A. Well, we couldn't understand how the thing could be done so poorly. One Sunday night I had a telephone call from Kansas City. One of my old boys who had been with me in the early self-starter business was a serviceman [fol. 3510] for the Cadillac in Kansas City, and he called me up and said: "Two men came in here and gave me \$100.00 and ten telegrams to be sent to Mr. Durant, one each day for the next ten days." He said, "I don't know what to do about it."

I said, "Well, you send the telegrams, but send me copies."

These copies, these telegrams, were pre-reports to Mr. Durant of what was going to happen at Wichita, Kansas, tractor test, and these men never went there. So when Mr. Durant came out to Dayton the next few days, I got on the train with him and we started back to New York, and I said I have got something here you ought to know about, and I showed him these telegrams that had already

been sent Monday and Tuesday, you see, or this might have been Wednesday when we were going back.

I said, "You ought to know I have got these copies." He said, "Well, I am very, very much interested in how you could get copies of personal telegrams sent to me."

I said, "That isn't important, but what I have got to show you is important. Here are the ones you are going to get for the next four or five days."

Unfortunately it had rained out there, and they hadn't been in the field to plow. So I told him I don't see how you can possibly, with as good judgment as you may have, take information like that—and that made for a very, very bad state of affairs in our tractor operations.

Q. Following that, did you and Mr. Durant go to Janesville to look over the operation?

A. Yes. Mr. Durant, Mr. Sloan and I went up there.

Q. You, Mr. Durant and Mr. Sloan?

A. Yes.

[fol. 3511] Q. Did the three of you look over the operation?

A. Yes.

Q. Did you discuss the matter with the engineers?

A. Yes.

Q. What conclusion after that did you have?

A. We came to the conclusion, Mr. Durant and Mr. Sloan, we agreed that the thing ought to be taken off the market, and then the next morning at breakfast, Mr. Durant had changed his mind, so we had to go over it again.

The thing had been a very unsatisfactory operation. I think the corporation lost about \$27,000,000.00 on it, and the reason was because we had no coordinated information, no coordinated engineering on it, at all.

Q. In the course of your research work, did you have any contact with the inventory situation of General Motors from 1920?

A. Very much. We were furnishing apparatus through the Delco Company to a great many of the divisions, and I had a man in Detroit that contacted these concerns. We kept our own inventory because it was not an uncommon thing in those days to have the Purchasing Department wire us to ship apparatus by express when they

would have two or three hundred of the devices in some warehouse they didn't know about.

I mean, the record system at that time was very, very poor.

Q. How about other inventory?

A. Well, that was equally true. I mean, they would have inventory sometime for a year's production of one thing, and four or five days' of another.

Q. Now, upon taking charge of the Research Department of General Motors in the winter of 1919, December and January, tell his Honor what kind of research organization [fol. 3512] General Motors had.

A. Well, they had very little. I think that they had a contract with the—I can't think of the first name, the Little Company up in Boston, to do some work for them, and Mr. Carl Zimmerchied had a little laboratory in Detroit, and that was about the sum total.

Arthur D. Little is the right name.

Q. How many dynamometers were there in the corporation?

A. We had none. They had no method of testing engines of any importance at all, but we had a dynamometer in Dayton. We used to loan that to the divisions once in awhile when they had to have one.

Q. For some years after your merger with General Motors, where was the General Motors research activity centered?

A. It was centered at Dayton, Ohio, and we had taken one of the buildings that we had built for manufacturing the Deleo light. That building had been taken over by the Government for manufacturing the Dayton-Wright airplane.

When that was released, we used part of that building for the first General Motors research.

Q. Did you shortly after coming with General Motors have any contact with the du Pont Company concerning the research work that you were doing on fuel?

A. Well, we had told them whatever we were doing, as we did everybody else. We had contacted them at various times.

Q. I show you a letter, Du Pont Defendant's Trial Exhibit No. 94.

I don't know, Mr. Cox, whether that has been offered by you people or whether you are going to offer it.

Mr. Cox: It has been offered.

Mr. Carpenter: This is a letter to Mr. Kettering dated [fol. 3513] February 2, 1920, from Mr. C. M. Stine, assistant director of the du Pont Company, addressed to you at the Dayton Engineering Laboratories Company.

"I have asked the Eastern Laboratory to recapitulate the motor fuel work with a view to giving me the present status of the whole problem."

On page 2:

"I have called Mr. Midgley's attention to the fact that the supply of aromatic amines will be determined largely by the demands of the dyestuff and rubber industries for these materials."

Then he says, on the next page, page 3:

"There are so many obvious factors involved in the possibility of preparing diamines from hydrocarbons produced by cracking that I feel this work should be urged forward with all possible speed and I have instructed the Eastern Laboratory accordingly. I have already prepared patent applications on the use of diamines in motor fuels."

By Mr. Carpenter:

Q. Did this work that Doctor Stine refers to result in the obtaining of an anti-knock compound?

A. No. Not directly, no.

Mr. Carpenter: I now offer GM Exhibit No. 245, a letter dated April 8, 1920, signed by Dr. F. O. Clements.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 245.)

[fol. 3514] Mr. Carpenter: This shows on the first page that you had a special research division of eight personnel, and on the second page, I read under the head of "Fuel Work":

"The rise in price of gasoline has made some of our fuel work look considerably better from the commercial standpoint. Our proposed procedure now is to keep motors of different varieties and types operating on a refinery product that will increase the available fuel supply at least 100 per cent. We are counting upon taking a crude and distilling off 50 per cent of its volume and calling this a motor fuel of the immediate future. This fuel will include the light materials, gasoline, kerosene and the early portions of the fuel-oil cuts. By adding the anti-knock material to this distillate, we count upon being able to increase the compression of the motors some twenty or thirty pounds. This increased compression will help us burn fairly clean and, at the same time, will help the vaporization. Carburetion and distribution problems will have to be solved, also.

"This is such an enormous program that it seems advisable to permit the du Pont organization to handle the production problems that pertain to the anti-knock material. Furthermore, it would be desirable to have a three-cornered connection, whereby we could have one of the national independent fuel companies also affiliated on the problem at hand."

By Mr. Carpenter:

Q. What did you mean by that expression "to permit the du Pont organization"—

[fol. 3515] Mr. Harsha: I object, your Honor, if I may, because I don't believe this is a letter written by the witness.

Mr. Carpenter: I think that is well taken.

The Court: It is signed by Dr. Clements.

Mr. Carpenter: That is right.

By Mr. Carpenter:

Q. At that time, who made the decision to that effect, Mr. Kettering?

A. To what effect?

Q. To permit the du Pont organization to handle the production problems.

A. That would be done by the laboratory.

Q. Dr. Clements is dead, is he not?

A. Yes. He was the director of the laboratory.

Q. Did you discuss this matter with him before he wrote this letter?

A. Yes.

Q. Now, at that time, April 8th, 1920, was the du Pont Company doing some work for your laboratory at your request?

A. Yes. We asked them to do some work. They, of course, were very expert on explosives, and they had methods of determining explosive pressures. We made a deal with them to burn some fuel in the same kind of bombs that they had tested explosives, and using some indicators that I think we furnished them on them, because we wanted to see that if this second order of burning, this thing we called detonation, would happen in a closed vessel without a piston or another part of the engine.

They did that work for us, and it came out exactly the same way as using the engine.

Q. Now I wish to refer to Government Trial Exhibit [fol. 3516] No. 575, a report from Mr. Lammot du Pont, Chairman, to the Executive Committee of the du Pont Company, dated April 22, 1920. This was about four months after your merger with the General Motors.

"At a conference April 22d, attended by Messrs. J. J. Raskob, C. F. Kettering, Irene du Pont, Dr. Reese and other representatives of the Chemical Department, the question of the basis upon which the du Pont Chemical Department would undertake work for General Motors Corporation was discussed. As a result, Mr. Raskob made a suggestion which appears to be reasonable and which I recommend the Executive Committee approve, in principle, as follows:"

I won't attempt to point out all of the eleven paragraphs, except to read the one at the top of page 2:

"It is understood that a representative of the du Pont Chemical Department will be appointed a member of any Experimental Board or Board for the control of chemical experimental work of General Motors

Corporation? The salary of this representative may be included in charges to General Motors corporation in either Group 1 or Group 2."

By Mr. Carpenter:

Q. Do you remember that conversation, Mr. Kettering?

A. Yes.

Q. Did a representative of the du Pont Chemical Company ever sit on any board of your research organization?

A. No, they did not.

Q. Did you have any representative of the du Pont [fol. 3517] Chemical Company associated at all in your laboratory?

A. No.

Mr. Carpenter: Now, I wish to refer, if your Honor please, to a series of five letters that were written by Mr. Lamont du Pont to Mr. Kettering concerning the execution of an agreement submitted by the du Pont Company to Mr. Kettering for signature, commencing June 15, 1920.

Government's Exhibit No. 580 transmits a copy of this proposed agreement from Mr. Lamont du Pont to the Executive Committee. A copy of a contract is attached.

In Government's Trial Exhibit No. 581 of October 10, 1921, Mr. Lamont du Pont refers to that agreement and asks Mr. Kettering to sign it.

Again, Exhibit Government's Trial Exhibit No. 583, dated October 24, 1921, in that Mr. du Pont urges the agreement be signed.

I now offer another in the series which is Defendants Trial Exhibit General Motors No. 246 of November 19th, 1921, which is dated November 19th, 1921, written by Mr. Lamont du Pont, vice chairman, to Mr. Kettering. I said it is dated November 19th, 1921.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 246.)

Mr. Carpenter: This is dated November 19th, 1921, and in it he says:

"It appears to me that we are talking about different things."

[fol. 3518] Referring to a letter of Mr. Kettering of November 5th.

"My principal interest is in seeing a general agreement whereby any kind of experimental chemical work can be undertaken by du Pont Company for General Motors without having to make up a special agreement on each subject."

Next is a letter from Mr. Lammot du Pont to Mr. Kettering and it is Government Trial Exhibit No. 589 of March 27, 1922; and another is Government Trial Exhibit No. 591 of April 1, 1922, and a final one is Government Trial Exhibit No. 593 of April 14, 1922. Mr. Kettering's replies to those letters have been marked in evidence, and they are as follows: Government Trial Exhibit No. 582 of October 21, 1921; Government Trial Exhibit No. 584 of November 5, 1921; Government Trial Exhibit No. 590 of March 29, 1922; Government Trial Exhibit No. 592 of April 3, 1922; and Government Trial Exhibit No. 594 of May 8th, 1922.

By Mr. Carpenter:

Q. Mr. Kettering, did you ever sign that agreement that was submitted by Mr. Lammot du Pont to you, and about which he wrote you so often?

A. No, we did not.

Q. Why did you not sign it, Mr. Kettering?

A. Well, his last letter there says:

"We are talking about different things."

and that was the principal thing.

You see we had started this work way back about 1916, and the du Ponts came into this thing much later, and they were thinking in terms of what you might say was current [fol. 3519] chemistry. We were thinking of the chemical as a part of the automobile. I mean, to us a molecule of fuel was just as much a part of the engine as the piston gear, and it would be impossible with that background of our engine experience, to have carried the thing out in the direction in which we wanted to go, and I have often felt that, supposing the thing had been reversed, and supposing that General Motors had bought into the du Pont Company

and found them working on automobiles, and we naturally would have felt that there should be at least cooperation. I think that is what Mr. du Pont is thinking of, but he was thinking of it in terms more of current chemistry rather than in the long range thing that we were thinking about.

So I didn't sign it for that reason, because—

Q. Did he understand the problem from the standpoint of you as a manufacturer or builder of engines?

A. Yes, at the end, I am sure he did, because the correspondence was dropped there when he said that we were talking about different things.

Q. Now, those letters were written partly during the time you were working on aniline. Did you come to a point where you gave up the work on aniline?

A. Yes, the boys came to me and said, "Now, there is no use to go ahead with this because we have completely exhausted this subject, and I wish you would give us another job."

And so I was getting ready to go to New York for one of the board meetings, and so I said, "Well, now, wait until I get back from New York."

The boys were very much worried. They felt that I had them in sort of a blind alley there, and when I went home I told Mrs. Kettering about the thing and I said, "The boys [fol. 3520] want to quit," and I said, "I know they are wrong because I know there is something down this road someplace," and while she was going along with me I said, "While we are down there to New York, I have got to get another line of approach so that we can talk to them."

I think we were in New York two days, and I hadn't thought up anything yet, but we started back on the train, and we had a drawing room, and like any Pullman car coming out of New York, the berths have newspapers in them, and when we asked the porter to make up our drawing room we sat in the berth part of the car, and I picked up any newspaper—I picked up any newspaper, and there was a little frame about maybe an inch or an inch and a half which said, "University professor discovers universal solvent."

Well, normally, I don't think I would have thought of that if I hadn't had this little story which we used quite often as an illustration of thinking a thing both ways.

The little story was this, that the old farmer was driving into town and he had a blow-out right in front of a small building, so he went in and asked if he could use the telephone to telephone down to the garage, and they said he could, and then he said, "Can I wait here"—it was in the wintertime—"until the garage man brings a tire out?"

They said, "That is perfectly all right."

So he said to them, "What are you gentlemen doing here?" and they said, "Well, we are chemists, and we are working on a tremendously important thing. In fact, it is the most important thing in chemistry."

And he said, "What is that?"

He said, "We are working on a universal solvent." [fol. 3521] And he said, "I don't understand what you mean by that."

He said, "Well, we are developing here a liquid that will dissolve anything that you will put it in."

And he said, "My God, what are you going to keep it in?"

Because I knew that little story, we read this, and this particular chemical was known as selenium oxychloride, and I believe it was at the University of Wisconsin, the man that developed it.

So I cut that out and put it in my pocket, and I said, "Now, I know there is something that the boys have not tried," because we had tried almost everything that we knew.

So I got back the next morning and went down, and I called them in, and I said, "Now, here is a material you have not tried."

Well, it happened that one of our boys knew the professor that had done the work, and I said, "See if you can get a little of that material," and, well, they said, "We don't think it will have any effect on the knock because it has oxygen in it," and that selenium oxychloride had oxygen and chlorine in it.

Now, both of those materials we had proven by a previous experiment made the fuel knock worse, but they got a sample of this thing, and it was almost a universal solvent. I mean, it was terrifically corrosive, but even with the oxygen and chlorine in there it helped the knock; I mean it knocked less.

So the only thing we could attribute that to was the selenium, and selenium as you know, is a metal that is rather—I wouldn't say a rare metal; so then we immediately made up some compounds of selenium with alcohol [fol. 3522] into diethyl selenide, and that was a pretty good material. As I remember it, it was about five times as good as aniline. But you must remember that all of these materials were requiring, in the per cent order, two or three per cent, and two or three per cent of the material had to be added to the fuel. So this was about ten times. I think it was, something like that, better than aniline. This was all before we had the so-called octane rating. We had to rate everything in aniline equivalent—it was so many times better than aniline.

Well, we ran those tests, and that was a switch from pure organic material to what was called organic metallo-compounds. Well, the selenium thing showed up pretty good. The boys made a related material known as tellurium. It was about twenty times as good as aniline, but of course, that was a tremendous step because that changed our whole perspective as to the future research in relation to aniline. It was opening up an entirely new field.

Q. In other words, you dropped the whole series of compounds of nitrogen and switched over to the metallo compounds?

A. Yes, because we had at least 20 or 30 times as good as—

Q. Could you use the selenium and tellurium?

A. Well, they had very bad odors, and that material used to get into your clothes, and it was a very disagreeable odor. It would get into your skin, too. Our boys used to want to go to motion pictures, and were afraid to go in there because everybody would look at them. So they would stand outside, and if they saw some kind of disreputable fellow going in, they would go in and sit down beside him. But it would take months and months to get [fol. 3523] that selenium out of your system. It was a rather peculiar problem.

Q. Now, having these two compounds that were better anti-knocks than you had ever tried before, that is, selenium diethyl selenide and tellurium, what did you do next in your laboratory?

A. We began to run a series of tests using different metals, and we set up—I believe it was around that time, we set up a so-called peg board.

Q. When were selenium and tellurium discovered, Mr. Kettering?

A. I have forgotten exactly the date, but they came very quickly after I came back from New York. Events followed very rapidly then.

Q. Will you tell his Honor about the peg board?

A. What we were trying to do was get a material or rating of these different materials so that you could look at the thing and see the whole picture. We had an associate or friend in the Massachusetts Institute of Technology, Dr. Robert Wilson who happens to be president of the Standard Oil of Indiana now. He had the well known atomic table which chemists use, taking these different materials like oxygen and hydrogen and so forth, and arrange them in an orderly way; that is a sort of alphabet of every chemist's education. He had taken that and reorganized it along another certain point of view. Now, theoretically, we laid that on a table and where each element was mentioned, we would put a pin, and that pin, I think, was about three inches long.

Now, that represented zero. If the material being tested had no effect, then we left the pin that high. If it increased the knock, we cut the pin off, so it gave you a chance to go below the pin. If it was anti-knock, we made the pin longer.

[fol. 3524] So every time we made a test of these materials, we would put a peg in the board; then you could just look at that and see what the whole thing was.

Well, after we had made a lot of tests, after we put pegs in there, we could see right away this thing warping down towards the heavy metal end of this table.

Q. The periodic table, according to the Robert Wilson arrangement?

A. Yes. So then we said why don't we go down through lead, that being way down in the corner. Then we found out nobody knew how to make the material from lead that was soluble in gasoline.

Q. You had to get a method of converting the metal into a material that was soluble in gasoline?

A. Soluble in gasoline, yes. It was no good if it was not. If it was going to be dissolved in gasoline, it had to be soluble.

Q. Who devised the method for making these materials out of these various metals?

A. Mr. Midgley and his boys worked on it. Nobody had any idea what the effectiveness of the lead would be, but we developed a little process which the chemists would know, or what was known as the zinc ethyl method, and we got a couple of spoonfuls of the material that way.

Then we could try it out on a little test engine. It was so infinitely better than anything we had ever seen—in other words, one-fifteenth of one percent—that meant that one gallon of tetraethyl lead would anti-knock 1500 gallons of fuel, but we didn't know how to make it.

It was a very difficult process, and as I say, the zinc ethyl method was completely impractical because zinc ethyl takes fire on exposure to the atmosphere, so that came in in the most difficult way.

[fol. 3525] Q. Was that zinc ethyl way of making it referred to in the literature, or was that devised by your boys in the laboratories?

A. I think we devised it. There was one little item that we found in the chemical literature, maybe about a half or three-quarters of an inch longer. The fellow said if you had certain things it would be possible to make these materials.

Q. Do you remember the date of the discovery of tetraethyl lead?

A. I think sometime in 1921, as I remember it. Have you got the date there?

Q. December 9, 1921, according to your laboratory records.

Q. How long before that, generally how long before that had you discovered selenium and tellurium?

A. About eight months, as I remember it. It was about eight or nine months after we started on these metallo organic materials.

Q. During that period, from the discovery of selenium and tellurium to what led to the discovery of tetraethyl lead, did you call upon the du Pont Company or any of their chemists for any help on that line of materials called the metallo organic materials?

A. I think we did. As I say, we did not try to keep it a secret.

Q. You kept it a secret?

A. I say, we didn't try to keep it a secret.

Q. Did they produce any metallo organic compounds for you?

A. No, they did not.

Q. Were any metallo organic compounds made in this country at that time by anybody?

A. No, not that I know of.

Q. This was the first metallo organic compound ever produced in this country, so far as you know?

A. Yes, sir.

[fol. 3526] Q. Well, after having discovered this material, and you found its greater effectiveness, what did you do next?

A. Well, we tried to get a process for making it, and I think we asked a du Pont chemist to come down and take a look at it, because we were not interested in the manufacture of it. We looked upon the fuel as a part of the engine rather than anything else that we would be interested in.

Q. I want to show you a letter, Mr. Kettering, which is in evidence, Government's Trial Exhibit No. 610, March 24, 1922, written by Mr. P. S. du Pont to Mr. Ireneé du Pont.

On the back page is a memorandum "Re: Doping of Fuel. Detroit, March 24, 1922."

This says:

"Mr. Kettering stated that his new doping compound, Tetra-Lead-Ethyl, may be used effectively in the proportion of one gallon to 1,000 or 1,500 of gasoline."

Then it says:

"The use of this dope will result in a saving of at least one quarter of the gasoline ordinarily consumed in an engine, and will permit of increasing compression very materially."

And then:

"The compound is made by preparing ethyl iodide from alcohol and iodine, permitting this to be acted upon by zinc dust plated with copper, the plating being necessary to produce the reaction. Zinc-ethyl is formed and is distilled off. Zinc-ethyl is highly inflammable when exposed to the air, but Kettering believes no more dangerous to work with than hot oils. Zinc-ethyl is brought into contact with dry lead chloride, which forms zinc chloride a compound $Pb_2 (C_2H_5)_4$. This compound further breaks down into metallic lead and tetra lead ethyl $Pb_4 (C_2H_5)_4$. Lead ethyl is a colorless liquid of sweetish odor, very poisonous if absorbed through the skin, resulting in lead poisoning almost immediately. In practice Kettering recommends that the material be made ill-smelling through the addition of some pungent material."

And then dropping down:

"Kettering would like to take up the question of manufacture with the du Pont Company representatives at an early date."

Did you tell Mr. P. S. du Pont at that conference that you wanted to take up the manufacture with the du Pont people at an early date?

A. Yes.

Q. Now, at that time had you discovered—this was three or four months after the discovery of tetraethyl lead. Had your boys in the laboratory been working on other methods to produce tetraethyl lead?

A. Yes. I think the first one we tried was using ethyl iodide and sodium lead chloride.

Q. Had you done that at the time of this memorandum?

A. I cannot remember the exact chronology of it. It was right in there because we were working very feverishly trying to get a process.

Q. Had you taken the matter up with any educational institutions?

A. Yes, we made a deal with Bob Wilson who was then an instructor in organic chemistry at M. I. T.

[fol. 3528] Q. Did they work on it?

A. Yes, they worked on two or three different methods of making tetraethyl lead. You see, Bob Wilson and Midgley had been very great friends for many, many years, so when we talked about getting some outside assistance, Midgley said; "I am sure Bob will be a good fellow to go to."

Q. When did you discover that tetraethyl lead was a hazardous material?

A. Well, I think we knew it just because we knew something about lead as a poison, and I think very early in the thing, we made arrangements with the University of Cincinnati. I had known Doctor Martin Fisher for many years. He was head of the Department of Physiological Chemistry.

He had a young assistant by the name of Robert Kehoe so we very early got in touch with them and had them as our advisors.

Q. After the discovery of the material, did you try it on engines?

A. Oh, yes. That was the only way we had to try it, on a little engine.

Q. Had you, at the time of this memorandum from Mr. P. S. du Pont of March 24, 1922, discovered any troubles or difficulties?

A. Yes. We put the tetraethyl lead in the fuel. Of course, it stopped the knock, but when that lead burned, it caused lead oxide; lead oxide happened to be a very good flux for dissolving the electrodes of the spark plugs; also it dissolved the glaze off of the spark plugs, so after you drive a couple of thousand miles, you don't have any spark plugs any more.

Q. Had you completed the 2,000 miles test at that time?

[fol. 3529] A. No, I don't think so at that time. It was very early in the thing. So then we suggested that we put carbon tetrachloride in; that is the ordinary material that is used in a fire extinguisher, in correct proportions, because chlorine has a very much higher affinity for the lead than oxygen.

So we added a little carbon tetrachloride to the material and it burned through. That saved the spark plugs completely, but the lead chloride left a deposit on the exhaust valves. It was a sticky material when it was hot, and that

would break off in chunks, and you would burn out your exhaust pipes, so we were not much better off than we were before.

Mr. Carpenter: Now, I offer in evidence, if the Court please, a General Motors Exhibit No. 246-A, which is a patent number 1,787,419, issued December 30, 1930, which was Mr. Midgley's patent for method of using motor fuels.

(Said document so offered and received in evidence was marked General Motors Exhibit No. 246-A).

Mr. Carpenter: I only want to refer to a little of it. This shows that the application for patents was filed April 15, 1922. That is the important date. The invention relates to fuels such, for example, as kerosene and gasoline employed in the operation of the internal-combustion engines, and to the art of burning the fuels in an engine.

His claim is:

"1. A method of utilizing a low compression motor [fol. 3530] fuel which comprises forming a combustible mixture of the fuel and air, and burning the mixture under a relatively high compression in the presence of vapors of a compounded metallic element."

Now, I want to refer to Government's Trial Exhibit No. 611, a letter of Mr. Midgley to Dr. Stine of the du Pont Company, which says, in the second sentence, the second paragraph, "It becomes my very pleasant privilege to tell you about the new anti-knock material which we have recently discovered."

Mr. Kettering, I show you now a letter from Mr. Irenee du Pont to you of July 10, 1922, and I should have said that this is Trial Exhibit 612 for the Government:

"Am just dropping you a line to thank you for the very pleasant time I had while visiting your laboratories on Thursday last. The visit was certainly most interesting and instructive."

Do you remember Mr. Irenee du Pont coming to your laboratory that day?

A. Yes, I remember it.

Q. How did he come?

A. Well, I asked him to come out because we were very

anxious to get somebody interested in trying to help us make this material, because it looked as though it was going to go.

Q. He says in the third paragraph:

"Am looking forward to a visit from you next week. I am trying to arrange it so that you will meet some of our men in the Dye Division as well as those in our Research Department. When you come, will you bring your latest information on the production of 'dope' by the bromine method."

[fol. 3531] Will you tell us what that reference in the letter is for "the production of dope by the bromine method?" Will you tell us what that is?

A. I say we had tried, we had made some tetraethyl lead by the iodine method, and that was impractical, because you couldn't get iodine in anything like the quantities we needed, so we naturally moved to the next.

You see, the bromine, iodine, chlorine and fluorine are a group of materials that are related in their chemical properties. Now, we said with iodine that we couldn't get that material, so we moved up to the next one which was bromine, and we made ethyl bromide to react with sodium and lead.

Q. And did you have any trouble making that reaction go?

A. Yes, we had trouble. When we put it together, it didn't go. I think we used a little pyridine as a catalyst in the thing. We got it to going after a relatively short time.

Q. By the way, in the course of working on those compounds that you have just mentioned, ethyl iodine and ethyl bromide, did you have an occurrence in your laboratory?

A. Yes, we were working, trying to nitrate some material, and we had sat around the table and talked about it before we tried it. We knew that the pressure rise was likely to be pretty fast, and we had a safety valve on the job that you could pull, but when the pressure rose, before the boy could get his hand on the safety valve, the apparatus blew up, and that blew out the windows and busted all the glass in there.

[fols. 3532-3533] That was about the only explosion we ever had there, and it worried us a lot.

Q. Did that occur while this work was going on, trying to devise a better method of making tetra-ethyl lead?

A. Yes.

ADJOURNMENT

[fol. 3534] The Court: You may proceed.

CHARLES F. KETTERING, a witness on behalf of the defendants, being previously duly sworn, resumed the stand, was examined and testified as follows:—

Direct Examination (Continued).

By Mr. Carpenter:

Q. Mr. Kettering, Mr. Ireneé du Pont, in his letter to you, Government Trial Exhibit No. 612, dated July 10, 1922, invited you, as we saw yesterday, to bring with you when you came to Wilmington your latest information on the production of dope by the bromine method.

Du Pont Exhibit No. 65, dated July 12, 1922, reports a conference that was held between you, Mr. C. S. Mott and Mr. P. S. du Pont.

Mr. du Pont at that time was president of General Motors Corporation, was he not?

A. Yes, he was.

Q. And Mr. Mott was what?

A. We was vice president and member of the Board.

Q. This states that:

“Kettering proposed that the manufacture of dope be started as soon as possible by the du Pont Company in order to produce 100 gallons per day or thereabouts, possibly working up to greater production, leaving to the future the determination of building of large plants capable of producing eight million gallons per annum, sufficient to dope all gasoline fuel in the United States.”

[fol. 3535] What was the consensus of opinion after you made that proposal—the opinion of those present, you and Mr. Mott and Mr. du Pont?

A: Well, I think they were willing to go along with it.

Q. Government Trial Exhibit No. 613, dated July 12, 1922, is a memorandum from Irene du Pont to Dr. Stine, and Mr. Harrington, and Dr. Reese of the du Pont Company stating that you would be in Wilmington on a Thursday, July 20.

Do you recall being there at that time?

A. Yes, I do. That was the first time I was ever there.

Q. Can you tell the Court what you did at that time; whom you met; what was done?

A. I met a number of their men—Dr. Stine, Mr. Harrington, Dr. Reese, quite a number of the others—I think Colcott and Bolton.

Then we went over to the Deepwater plant, the dye plant of the du Pont organization, and took a look at the various processes, and I think they had a building there that wasn't in use at the time that they suggested we might use for this preliminary setup.

Q. Did they show you their various chemical apparatus with which they made various compounds?

A. Oh, yes. They took me through a lot of the different sections of the dye plant there.

Q. Do you recall anything that you said to them that was of particular importance in this case?

A. I don't remember right this minute.

Q. Was anything said about their producing tetraethyl lead or trying to produce it?

A. Yes. We wanted them to try to produce it.

[fol. 3536] Q. I now refer to General Motors Exhibit No. 71, dated August 2, 1922, a report by Dr. F. O. Clements, Director of Research of General Motors Research Corporation to the Executive Committee.

Note: Exhibit GM-71 put in evidence at page 5178 of Stenographers Minutes.

This reads as follows:

"The month's efforts have been confined to semi-works production of lead of tetra-ethyl. The entire process has been studied intensively, to eliminate cost. The du Pont organization has been brought into the work and they have duplicated our semi-works production very readily. Just now, we are counting upon the

du Pont organization to collaborate with us on this new compound. This is the logical procedure, due to the fact that they have equipment and floor space suitable for this kind of work. The question of stability has been satisfactorily solved."

What was the question of stability, Mr. Kettering?

A. Well, if you didn't get this tetraethyl lead fairly pure, especially in the presence of light, it tended to decompose. But we found out what the impurity was in it, and we got that out.

Q. (Reading):

"Some of the other difficulties encountered, such as corrosion of spark plugs, are being very carefully considered. The results obtained during the month show reasonable progress."

[fol. 3537] Who was it who decided to bring into the work the du Pont organization?

A. Well, myself and Mr. Midgley were the fellows who first approached them on it.

Mr. Carpenter: I now offer in evidence, if your Honor please, General Motors Exhibit No. 247, which is a telegram from Mr. Midgley to Dr. E. K. Bolton, Chemical Section of the du Pont Company.

(Said document so offered and received in evidence was marked General Motors Exhibit No. 247.)

By Mr. Carpenter:

Q. This is dated August 23, and reads:

"When may we expect shipment of anti-knock material stop Need it for races stop Please wire at once."

What races does that refer to, Mr. Kettering?

A. I think that was Uniontown.

Q. Uniontown, Pennsylvania?

A. Uniontown, Pennsylvania, yes. They had a speedway there.

Q. Had the du Pont Company promised to produce some

tetraethyl lead and ship it to you so it could be used at those races?

A. I think they had. That was between Midgley and the boys, I think; because Midgley was very much interested in trying this out in a spectacular way, like a racing car.

Q. Do you recall what the result of the race was?

A. I think our cars—I think we entered a great many cars in it, and if you get enough of them in, you are bound to get a winner, you know.

[fol. 3538] Mr. Carpenter: If your Honor please, I offer General Motors Exhibit No. 248, which is a telegram from Mr. W. F. Harrington of the du Pont Company to Mr. Midgley, General Motors Research Corporation, dated August 24, 1922.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 248.)

By Mr. Carpenter:

Q. This reads:

"Shipping you seventy pounds anti-knock five-hundred by express today."

What was anti-knock 500?

A. Well, I imagine it was tetraethyl lead.

Q. That was the number you gave to the product?

A. Yes.

Mr. Carpenter: I offer now, if your Honor please General Motors Exhibit No. 249, a telegram of August 25, 1922, from W. F. Harrington to Midgley.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 249.)

By Mr. Carpenter:

Q. This reads:

"Shipped for six pounds antiknock five-hundred today by express."

Mr. Kettering, I now refer to Government's Trial Exhibit [fol. 3539] No. 615, which is a report by Dr. Clements

of your Research organization to the Executive Committee of General Motors, and call your attention to item 3:

"Production work on a small scale, using our sodium-lead and ethyl bromide process, was begun at the dye works of the du Pont Company. They are now producing about a gallon of lead tetraethyl per day."

That was of course, a report for the month of August, 1922.

Also Item 6 on page 2, which reads:

"In view of the satisfactory progress that is being made on the production program and of certain problems incident to the use of lead compounds as anti-knock materials, it has been decided to drop production, as well as research on production here. Production will be continued at the du Pont Company, and research on methods of production will be actively continued at the Massachusetts Institute of Technology. The research work at this laboratory will be concentrated on the solution of the spark-plug and exhaust-valve troubles that have been experienced in the use of lead compounds as antiknock materials."

What was the next thing that was done, Mr. Kettering, if you recall, following that report?

A. Well, we had this problem—I think we mentioned it yesterday—of the lead, burning lead oxide and corroding or dissolving the spark plugs, and we wanted to get rid of the tetraethyl lead as soon as we could because we had the utilization. You see, we had very little utilization on this thing at that time. We wanted to get cars on the road, get them running, and get our road tests under operation.

[fol. 3540] Q. I now refer you, Mr. Kettering, to Government's Exhibit No. 617, which is a letter from Mr. Sloan to you, dated September 27, 1922, which states:

"I was just talking over the telephone with Mr. Irene du Pont and he believes it would be desirable, as I think you do as evidence by our discussion in Detroit week before last, that a more definite arrange-

ment be made between the du Pont Company and ourselves relative to the work that they are doing."

Do you recall having a discussion with Mr. Sloan in Detroit prior to that letter of September 27?

A. Yes.

Q. Do you remember what was said between you?

A. Here was the thing. You see this was just hearsay between du Pont and us. We got Mr. Harrington and some of the boys down there, and they were trying to find out, to see whether the process we developed would work or not, but there was no agreement, nothing between the two companies so far as how to proceed on the prices or the contracts or anything else.

Q. What did you propose to Mr. Sloan?

A. I told him we ought to make a contract with them so that we could have a definite understanding, so that they could prepare for a fixed production, and get the thing going in a more commercial way.

Q. Now, Mr. Kettering, I call your attention to Government's Trial Exhibit No. 618, which is an agreement made on the 6th day of October, 1922, between the du Pont Company as the manufacturer and General Motors Corporation as the purchaser.

[fol. 3541] I call your attention to the third paragraph which reads:

"Whereas, the Purchaser is desirous that said compounds be manufactured for and sold to it by the Manufacturer, and the Manufacturer is willing so to do in accordance with the following terms and conditions."

I wish you would tell his Honor who was the instigator of the preparation of that contract?

A. Well, I was.

Q. What did you do about having it prepared?

A. Well, I don't remember who prepared it; whether it was Mr. McEvoy or some of the boys, but I asked them to get something together.

Q. Were you present in Mr. Sloan's office on the 6th of October when that agreement was signed by Mr. Irenee du Pont?

A. I don't know whether I was or not, Mr. Carpenter.

Q. What did you have to say, Mr. Kettering, about the price of \$2.00 a pound that the du Pont Company fixed on that product or that was fixed, or included in the contract?

A. I thought it was quite all right, because this thing was so uncertain, so experimental. They said that would be enough, if they only made a few thousand pounds, to amortize at least the equipment that was put into it.

Q. What have you to say about the provision that this was to be a continuing contract?

A. Well, we thought it would be some incentive to the du Pont Company if we didn't just make it a 1,000 gallon contract and say that was the end of it, because they were preparing to make additional amounts. They were going to continue to make it after the first batch.

[fol. 3542] Q. Had you ever, in your experience before this, negotiated or executed a contract of that nature?

A. Well, I always did that in the development of all the industries I had anything to do with, after we got beyond what you might say was the experimental model. I always made a contract. I did that with my self-starter, the Delco light, and even when I was with the Cash Register Company.

I contracted that out because I never had enough money to do it myself, so I always had to have people do it for me.

Q. That is what you did in this case?

A. Yes, sir.

Mr. Carpenter: If your Honor please, I offer General Motors Exhibit No. 250, which is a letter written under date of November 13, 1922, by Norman Roberts to Thomas Midgley, Jr., General Motors Corporation.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 250.)

Mr. Carpenter: It reads:

"The enclosed is my attempt at carrying out my orders from Washington. I am enclosing it to you in case you have time to look it over and correct errors, etc."

Next to that is a copy of the report by Mr. Roberts to the Surgeon General of the United States Public Health

Service dated November 13, 1922. I want only to read a little bit of it. The first paragraph reads:

"I have the honor to report that I have accomplished the purpose of the following Bureau telegram to the Chief Medical Officer:

[fol. 3543] "Direct Surgeon Norman Roberts attend meeting American Chemical Society Rumford Hall Fifty Two East Forty First Street New York City November Ten Eight PM report on address by Thomas Midgley 'Gaseous Detonation and Its Control' period Services interest is in possible poisonous effects of lead compound in gasoline."

I do not think it is necessary to read that report, but he reports on what Midgley stated in that letter.

I now offer, sir, General Motors Exhibit No. 251, of November 18, 1922, written by Mr. Midgley to Dr. Norman Roberts, Quarantine Station, Staten Island, New York.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 251.)

Mr. Carpenter: In it, he says:

"I think you have gotten the situation remarkably well and I have no comments or corrections to make."

By Mr. Carpenter:

Q. Were you familiar, Mr. Kettering, with the fact that the Public Health Service was at that time looking into the question of tetraethyl lead?

A. Yes. I think we had asked them to look into the thing because we had recognized that there was a hazard in the use of the lead as everybody knew; the storage battery people knew, and the paint people knew it and had known it for years and years, but nobody had ever worked with lead in its organic form, so we thought it was necessary to have the whole thing re-studied.

Q. I don't think I asked you to tell the Court just what [fol. 3544] tetraethyl lead is. If I did, your Honor, I wish you would call it to my attention. I think I did not.

The Court: No, it has not been discussed.

By Mr. Carpenter:

Q. What is tetraethyl lead?

A. Well, tetraethyl lead is a liquid in which we have one lead molecule and four of the ethyl group.

Now, the organic chemists, when they say methyl, ethyl, propyl, butyl, they just say 1, 2, 3, 4 and 5 and so forth. Now, the ethyl groups are the ones that have the two carbon atoms, so if you could imagine a circle here which would be representative of lead, then there would be four groups around each of the two carbons, and five hydrogens. Now, there are many forms of this, organic forms of lead. You use the methyl group, the ethyl group, the propyl group and so on, but the ethyl were the ethyl carriers. That is the best one for the anti-knock.

Q. You have told us what it is from the standpoint of a chemist. Now, suppose his Honor would look at a vial of it. What would it look like?

A. It is a clear material with a rather sweetish odor. It would be very heavy. You see, water weighs eight pounds to the gallon, and tetraethyl lead weighs thirteen pounds to the gallon, so you could tell, when you picked it up, it is heavier.

Q. What is its characteristic as to solubility in water or gasoline?

A. It is insoluble in water, and it is soluble in gasoline, because that was the important thing.

Q. Is it an oil?

A. It is more of an oil, and the maximum amount we use of it is about a teaspoonful per gallon. That is the maximum. The ordinary gasoline of today uses about, I [fols. 3545-3546] suppose it would average about, a half a teaspoonful per gallon.

Q. Now, will tetraethyl lead evaporate in the air? Is it volatile?

A. Yes, it evaporates.

Mr. Carpenter: Now, if your Honor please, I offer in evidence General Motors Exhibit No. 252, which is a report by Thomas Midgley of the Fuel Section to C. F. Kettering, entitled, "Summary of Present Situation on Antiknock Material."

(Said document so offered and received in evidence was marked General Motors Exhibit No. 252.)

[fol. 3547] I now offer, if the Court please, General Motors Exhibits Nos. 253 and 254, which go together.

(Said documents, so offered and received in evidence, were marked General Motors Exhibits Nos. 253 and 254, respectively.)

[fol. 3548] I next offer General Motors Exhibit No. 255 which is a letter from Mr. Midgley to Mr. Kettering, dated February 2, 1923, and the subject is Sale of Antiknock Gasoline:

(Said document so offered and received in evidence was marked General Motors Exhibit No. 255.)

[fol. 3549] By Mr. Carpenter:

Q. Mr. Kettering, can you tell me why it was that although this contract was made with the du Pont Company on October 6, 1922, that you first placed this product on sale not until February 2, 1923?

A. I think that is when we were pretty sure that we had the spark plug difficulty out of the road and we had quite a number of test cars, and while we were very anxious to see what the public thought about it, this is the first time we felt safe in putting it out—I mean, from the standpoint of the spark plug difficulties.

Q. I now refer to General Motors Exhibit No. 75, dated March 29, 1923, a telegram from Midgley to Mr. W. F. Harrington of the du Pont Company, reading as follows:

Note: Exhibit GM-75 put in evidence at page 5198 of Stenographers Minutes.

“It was officially decided this morning to go ahead with the anti-knock program as rapidly as possible. [fols. 3550-3551] (Stop) Consequently this constitutes official notification that you are to get out one hundred gallons of tetraethyl lead per day as soon as possible.

(Stop) Expect to see you Monday afternoon next week."

By Mr. Carpenter:

Q. Now, Mr. Kettering, up to that time where had you been getting tetraethyl lead that you were placing in the gasoline?

A. Well, we had been making a little bit ourselves, in our own little semi-works plant, and I don't know if we were getting it from the little semi-works plant that du Ponts had or not.

Q. Well, the telegrams—

A. Indicated they were shipping us some.

Q. They shipped you a little?

A. Yes.

Q. But you had no large production?

A. We had no large production, but we had been making a little, and they had been making some, so we had the two sources.

Mr. Carpenter: I next offer, with the Court's permission, General Motors Exhibit 256, which is a report by T. Midgley, Jr., Chief Engineer, Fuel Section, dated April 9, 1923, which reports Midgley's visits on the first page, to Atlantic Refining Company concerning the marketing, their marketing of tetraethyl lead, and on page 2, to his visit to the Tide Water Oil Company.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 256.)

[fol. 3552] By Mr. Carpenter:

Q. Did you receive that report in due course?

A. Yes, I received that.

Q. How did you regard the report that Standard Oil had a patent?

A. Well, we felt it would be an advantageous thing, because as I say, this was so new that you could hardly expect the first shot at it would be the right one, so if anybody else came along with something it was just another link in the chain.

Q. Were you at that time looking on tetraethyl lead as a product from which General Motors would make a lot of money as a product?

A. Well, we never thought of tetraethyl lead as a product, as an end product. We thought of it always as a means to an end.

We were thinking in terms of what we could do with engines, if we could get rid of the knock.

As I say, we started that way back before we had any connection with General Motors in the development of internal combustion engines. I think I mentioned it yesterday, that the whole interest in the thing got started off with the idea that gasoline was a drug on the market, and therefore nobody paid any attention to motor efficiencies, and we thought we knew what had to be done if you were ever going to get out of the gasoline anything like what you should expect from it.

Mr. Carpenter: I now, offer, with the Court's permission, General Motors Exhibit No. 256-A, which is a copy of a patent granted January 1, 1929, No. 1,697,245, to Charles A. Kraus and Conrad C. Callis, of Worcester, Massachusetts, assignors to Standard Oil Development Company.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 256-A.)

Mr. Carpenter: Calling your Honor's attention to the [fol. 3554] fact that the application for this patent was filed April 5, 1923, which was just a day or two following Mr. Midgley's visit to Mr. Howard.

I call your attention to Claim 1 of the patent:

"The improvement in the art of preparing lead tetraethyl, which comprises alloying lead with about 10% of sodium, subdividing the alloy while substantially avoiding oxidation, and reacting upon the alloy with ethyl chloride at a temperature of 35-70° C."

By Mr. Carpenter:

Q. Do you know, Mr. Kettering, whether your laboratory, Massachusetts Institute of Technology, and the du Pont Company, had prior to this tried to react sodium lead alloy with ethyl chloride?

A. Well, I don't think—we may have tried it, but we were trying to keep the pressures low, you see. But I think that everybody suspected that it would react with ethyl chloride, and apparently the one thing here that somebody had tried and found was that you had to have a very small amount of sodium in the thing before it would work. That was the fundamental thing.

Q. And it had to be done under pressure?

A. Under pressure, and fairly high temperatures, too.

Q. Mr. Kettering, would you tell whether General Motors made any other attempt to market tetraethyl lead, what you further did in contacting the oil companies to see whether they would be interested.

A. Well, I think that Midgley went around and saw a lot of the oil companies, to see whether they were interested in it or not, because we were getting enough quantity now that we could open some more stations.

We tried to get Standard Oil of Jersey to take a look at [fol. 3555] it, and I think they sent some men down to take a look after we had these tests. We had several stations open, one at Middletown, Ohio, I think, and one at Cincinnati.

Q. Did your people contact the Standard Oil of Indiana?

A. We contacted Standard Oil of Indiana, yes. I think Bob Wilson had left Massachusetts Institute of Technology and gone down there then to head up a research organization for them.

Q. What was the attitude of Standard of Indiana?

A. They were interested in it, but they didn't see how they could do it very well, because they were marketing just one grade of gasoline, and most of their filling stations had just one pump, and to put on another grade of gasoline meant a duplication of an enormous amount of expensive equipment.

Then we developed what was called an ethylizer so that you could use the one pump. This was a little device that if you bought five gallons of gasoline and you wanted ethyl, you turned this five shots, and then you pumped the gasoline through the hose, and that dumped the tetraethyl lead into the hose, and then when you ran the gasoline pump that pumped it in.

In other words, it was local ethylization.

Q. Gasoline ran from the tank into the tank of the automobile?

A. Of the automobile, that is right.

Q. And as it went the tetraethyl lead was fed into the hose?

A. Well, I said we usually put it in five gallon chunks. We turned this five times, each turn was a gallon, and ran that amount of tetraethyl lead into the hose, and when you washed it through, when you pumped the gasoline, it washed it out into the automobile tank.

[fol. 3556] Q. Did your laboratory devise the ethylizer?

A. Oh, yes.

Q. How much tetraethyl lead would the ethylizer hold?

A. Well, I think those cans held two liters.

Q. Two liters? That is about two quarts?

A. Well, about that, yes.

Q. Roughly two quarts?

A. Yes.

Mr. Carpenter: I next refer, your Honor, to General Motors Exhibit No. 76—I am not sure that it has been offered, but if not, I offer it now. It is a license agreement dated the 29th of September, 1923, between General Motors Chemical Company and Standard Oil Company of Indiana, which was a license to the Indiana Company for a period of eighteen months from the 1st of October, 1923, for the exclusive sale of Ethyl gasoline in the States of Illinois, Indiana, Kansas, Iowa, Michigan, Minnesota, Missouri, North Dakota, South Dakota, Oklahoma and Wisconsin.

(Said document so offered and received in evidence, was marked General Motors Exhibit No. 76.)

By Mr. Carpenter:

Q. I notice, Mr. Kettering, that in this contract it is provided in paragraph 6, that:

"The price charged by the Buyer to the public or consumer for all gasoline sold by it and treated with said anti-knock mixture shall be the prevailing price of its untreated gasoline plus an amount not greater than three cents for each gallon of such gasoline so treated."

Why did you put that limitation of three cents a gallon?
[fol. 3557] Mr. Harsha: I object, your Honor. I think the contract speaks for itself. I don't think this is relevant at all to the issues in this case.

The Court: Oh, he may state why. Objection overruled.

The Witness: Why, we didn't want to get the price of these premium gasolines up so high that people wouldn't buy them. We wanted to hold it down as low as we possibly could. We weren't interested in gasoline. We were interested in the automobiles and engines, and the lower we could get the material down, why the better.

Q. At that time, what premium was being charged for the benzo-blend, do you recall?

A. I think it went up as high as seven cents a gallon.

Q. This was an attempt on your part to hold the premium down?

A. That was all.

Q. Do you know why it was that that license agreement was not executed until approximately a year after that contract with the du Pont Company?

A. Well, I think we were simply waiting until we were sure we would get production enough to take that much business on. I think that was the whole thing.

Q. After they got the plant in production and you got some assured production, then you made these first license contracts?

A. Yes.

Q. Following that, what was the attitude of Standard of New Jersey?

A. Well, they were just a little bit divided among themselves. Their sales organization wasn't too keen about the thing, although some of their people, their technical people, were. So they didn't want to make a contract, although this brought the thing up again.

Q. What did you do to induce them?

A. Well, we knew some people that had written in to us [fol. 3558] about the thing that were Standard Oil agents, if you want to think of them as such. One was Spears and Riddell, I believe, down in Wheeling, and so we made a contract with them.

We made a contract with four or five of the Standard of Jersey distributing organizations.

The great argument of the sales department of Standard of New Jersey was that people wouldn't buy it; they wouldn't pay a premium. Spears and Riddell had two stations, and they began to expand rapidly and to buy up other filling stations, and that was really the thing that brought it about. That was a demonstration to the home office that people would buy it.

Q. They were sort of drawn in by the back door?

A. We went in by the back door, sort of.

Mr. Carpenter: I now offer General Motors Exhibit No. 257, dated November 26, 1923, which is a report made by J. H. Senior, A. Clarke Bedford, and Dr. C. O. Johns to Mr. E. M. Clark and Mr. J. A. Moffett of a report of a committee of the Standard Oil officials of New Jersey who visited in Dayton, Hamilton and Cincinnati with a view to making an intensive study of the results being secured in the marketing of the General Motors product known as ethyl gas and reporting their findings.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 257.)

By Mr. Carpenter:

Q. I think it is unnecessary to read what they found, but it is all stated here if anyone is interesting in looking at it.

[fol. 3559]. Did you know, Mr. Kettering, that this committee from the Standard Oil was coming out to visit your stations, or had been there?

A. Well, they came out to see us, but we didn't know they made the trip there to Hamilton and Cincinnati. We showed them what we had in Dayton, but we didn't know that they went beyond that at that time.

Q. Mr. Kettering, who were Mr. J. H. Senior, Clarke Bedford and Dr. Johns?

A. Well, Mr. Senior was one of the vice presidents in charge of marketing of Standard Oil. Mr. Clarke Bedford was—I am not sure—their president at one time was named Bedford. I think this was a son of the former president. Dr. Johns was one of their head research men.

Q. Who were Mr. E. M. Clark and Mr. J. A. Moffett to whom this report is addressed?

A. J. A. Moffett was the sales manager of Standard of New Jersey, and Mr. E. M. Clark, I think, was the manufacturing vice president at that time.

Q. I now refer to Government's Trial Exhibit No. 620 which is a license agreement from General Motors Chemical Company to the Standard Oil Company of New Jersey, dated January 7, 1924, and also to General Motors Exhibit No. 78, which is a copy of the license agreement from General Motors Chemical Company, the same date, to Standard Oil Company of Louisiana, each of those being for the respective territories in which those two companies sold gasoline.

I call your Honor's attention to the fact that they are for limited periods of time, and also that the premium is limited to 3 cents a gallon as in the Standard Oil of Indiana contract.

General Motors Exhibit No. 77 is an agreement from the [fol. 3560] General Motors Corporation guaranteeing performance of those contracts by General Motors Chemical Company.

Likewise General Motors Exhibit No. 79, also dated January 9, 1924, the guarantee of the Standard Oil of Louisiana contract.

By Mr. Carpenter:

Q. Mr. Kettering, will you state what the General Motors Chemical Company was?

A. Well, our research laboratory was on a very definite budget. We never tried to run our research on a profit and loss basis at all.

When we began to get into these operations, we either had to organize a separate company or throw our research accounting over on a profit and loss basis. So I suggested organizing the General Motors Chemical Company, which would take over the commercial side of this material and keep it out of our research bookkeeping. This was an entirely different kind of accounting because we got all of our money for operating the laboratory on the appropriation basis, and this now was going to have some income coming in other than appropriations.

So this was my device for getting the two things sep-

arated from the accounting standpoint so each one would stand on its own feet.

Mr. Carpenter: If your Honor please, I now refer to General Motors Exhibit No. 80, which is another license agreement from General Motors Chemical Company to the Gulf Refining Company for the sale of ethyl gas in Pennsylvania, Delaware, and the territory served by the Gulf Oil at that time.

By Mr. Carpenter:

Q. Were you familiar, Mr. Kettering, with Mr. Sloan's letter to Mr. Irene du Pont, known as Government Trial Exhibit No. 625, dated January 12, 1924, in which Mr. Sloan requested the du Pont Company to increase their production to 1,100,000 pounds of tetraethyl lead?

A. I think I was familiar with it because we had discussed with him that we needed to increase the production.

Q. And that was due to what?

A. Due to making these new contracts that we had. Our business was expanding quite rapidly.

Q. I now call your attention, Mr. Kettering, to Government Trial Exhibit No. 622, dated January 28, 1924, which is a letter from Mr. Sloan to Mr. Irene du Pont, which says in the first paragraph:

"I have just had a talk with two or three of the high officials of the Standard Oil Company of New Jersey, covering our relations with them; i.e., their relations with the General Motors Chemical Company, with reference to this tetra ethyl picture, dealing with distribution here and abroad and various other phases of the matter that they wanted to discuss. In connection with the situation I would like to pass on to you the following in order that you might consider it and I might profit by your reaction.

"There apparently has been more or less discussion [fol. 3562] between Mr. Kettering and these people in the past month regarding the manufacture of tetraethyl-lead. They say—whether they are right or not I do not know—that six or seven months ago, in discussing this particular point with Mr. Kettering and Mr. Midgley they were encouraged to see what they could do in developing a process for making tetra-

ethyl lead, hoping thereby to discover something that would result in a much lower cost of production."

Had you talked with any of the Standard Oil officials, Mr. Kettering, about manufacturing under their process?

A. Yes, we talked to them about it. In fact, we had encouraged them to go ahead. I think a letter you read there indicates that we suggested they try to make a hundred gallons a day.

Q. And at that time do you know whether the Standard Oil had tried out their process except on a laboratory basis?

A. I don't think they had, no. I think it simply was a very small quantity they had made in the chemical laboratory.

Q. I call your attention, Mr. Kettering, to Mr. Sloan's letter to Mr. Irene du Pont, of February 5, 1924, in which he enclosed a copy of letter he had sent to Mr. Senior, dated February 4, 1924. Those are both Government's Exhibit No. 624.

The last paragraph of the letter to Mr. Senior says:

"Mr. C. F. Kettering will be in New York some time the latter part of this week and I have asked him to see you in connection with various operating matters connected with the workout of the present agreement."

[fol. 3563] Did you have a talk with Mr. Senior?

A. Yes, I had talks with him.

Q. Can you state what those were?

A. Well, the first talk I had with Mr. Senior, he was very anxious to have the export gasoline ethylized, and we were trying—we talked about that before we had a general contract with Standard because he said regardless of whether the domestic people wanted to go ahead with it or not, he would like to go ahead with it for the export.

We discussed methods whereby we set up a contract on that.

Q. Now, then, following this January 28 letter, did you have another talk with Mr. Senior?

A. Yes, because he had been one of the men who came out to Dayton, if you remember, and we did have another talk with him. There is where we began to work out the formulation of the agreement or the formation of the Ethyl Corporation.

Q. Did you in that discussion propose to him a plan whereby General Motors and Standard Oil might be able to come together?

A. Yes, I did. Of course, when you have an important material like this that is not a physical thing, where you can count it by units, the question of royalty agreements or how that would be set up, and I suggested that since we were going to have varying amounts in different kinds of gasoline that you would set up the system on this basis: That you would take the 20 best operating companies in the United States and get their return on capital, and that if this new company was organized, that they should get a nominal return on capital as shown by those figures before the General Motors Chemical Company got anything.

[fol. 3564] Then if they made more than that, that we would get 25 percent of what you made more than a normal operating business as royalties. That got rid of all complicated bookkeeping and everything of the kind.

Q. Did Mr. Sloan or you carry on the negotiations with Standard Oil Company that led to the formation of the Ethyl Gasoline?

A. I think I may have had a little something to do with it, but I think Mr. Sloan did more of that than I did. He was in New York, and they were in New York, and I was out in Dayton, and I am not a very good contract maker, anyhow.

Q. Did you have anything to do with the decision to permit the Standard Oil Company of New Jersey to put up a 100 gallon per day lead plant that was actually put up?

A. Well, I think we talked about it, yes.

Q. But the decision to permit them to manufacture was made by somebody else?

A. Well, I think maybe Mr. Midgley and Mr. Sloan made the final decision on that.

The Court: The Court stands recessed for fifteen minutes.

(A short recess was here taken.)

By Mr. Carpenter:

Q. Mr. Kettering, in the spring of 1924, did you have any trouble out in Dayton in the work you were doing on tetraethyl lead from a health hazard?

A. Yes, we had, because we had great difficulty in trying to teach the people that this material was dangerous, and this was a different kind of lead than the doctors had been dealing with. It would absorb very rapidly. If you ever had one of these blood pressure implements on your arm, and you put a drop, one drop, of tetraethyl lead on a glass plate, and put your finger on it, in a few seconds, in thirty [fol. 3565] or forty seconds, you would see a shift in the blood pressure, showing how rapidly it would absorb, which was a new phase to the medical people.

Of course, we had had these tests being run at the Bureau of Mines. We had Doctor Kehoe from the University of Cincinnati—we had had the very best advice that we could get, and we could not get the thing across to the boys that you might say was bothering this stuff—we put watchmen in at the plant, and they used to snap the stuff at each other and throw it at each other, and they were saying that they were sissies. They did not realize what they were working with.

We had great difficulty in getting them to realize what it was.

Q. I refer you, Mr. Kettering, to Government's Trial Exhibit No. 657, a telegram that you sent to Mr. Sloan on June 5th, 1924, reading as follows:

"To inform you on ethyl gas situation stop. Organization here in excellent shape stop. We are unable to get sufficient lead from the du Pont Company to meet our requirements stop. Whole program is being prejudiced on this account stop. Can you get in touch with me if they are unable to meet schedule we will change our program relative to ethylizer."

Do you recall the incident, and the occasion for it?

A. Yes. We were building these ethylizers to go on these Standard of Indiana pumps. If we were not going to get a certain program, we were going to change our rate. We had the boys working overtime to get this material out.

[fol. 3566] Q. That was the occasion of that telegram?

A. Yes, sir.

Q. And the report you got is in evidence.

A. They had a lot of bad sodium.

Mr. Carpenter: I now refer to, if your Honor please, General Motors Exhibit No. 82, which is a letter from Mr. Sloan to Mr. Kettering dated June 23, 1924, and I wish to read from the first paragraph:

"I have been thinking over at considerable length certain of the points which were raised at the last conference we had with the Standard Oil Company of N. J. group in connection with the proposed partnership arrangement and I have been particularly concerned with the point that they brought up relative to the hazard that is being brought into the premises by proceeding along the proposed lines."

And in the third paragraph, first page, he says:

"Therefore, in connection with this particular matter; i.e., the hazard involved in this development, it would appear to me that it would be most constructive to do perhaps to some extent what we have already done but in a little different way; viz., that our new partners the Standard Oil of N. J. should appoint their medical man; the du Pont Company should appoint their medical man and you should appoint whoever you wish, and that those three men should be a board of experts who would deal with the question and should submit a report to both the Standard Oil Company [fol. 3567] of N. J. and ourselves, dealing with the matter as they saw it after contributing to the picture what knowledge they themselves had and what judgment they could formulate after listening to the evidence and consulting such experts as they might care to consult in the premises."

Did you appoint your expert, Mr. Kettering?

A. Yes, sir, we had Dr. Kehoe from the University of Cincinnati. That is K-e-h-o-e.

Q. And did that committee of experts go to work on the matter?

A. Yes, we appointed them and they got together and made some reports, but we had had Dr. Kehoe almost from the beginning on this thing.

Q. And you had had the Bureau of Mines conduct research on tetraethyl lead. What kind of work had they done?

A. Well, what they did, they took the exhaust from engines. I believe you mentioned that here a while ago—and they had used dogs and used some goats and various things like that, animal experimentation, and had been very thorough, and they found that there was no danger from the exhaust even in a very concentrated place like 42nd and Broadway in New York which was one of the best concentrations we got, and we had like a little flower delivery truck in which we had the apparatus so that we could sample the air. We could drive up the street and take a sample of air, so we had what you might say was the most concentrated form that we could get of exhaust gas, and we knew the proportion of that, and we could interpret that, and they had worked it out very, very [fol. 3568] thoroughly and found there was no health hazard at all with the exhaust.

Q. The trouble that you had had in your—

A. Well, that was contact with the material itself, in manufacturing and processing and bottling and handling it.

Q. That is putting in the tetraethyl lead that the du Pont Company manufactured, into the ethylizers that you shipped to the oil company?

A. That's right. Of course, later on that ethylizer thing disappeared.

Mr. Carpenter: If your Honor please, I offer in evidence General Motor Exhibits Nos. 258 and 259.

(Said documents, so offered and received in evidence, were marked General Motors Exhibits Nos. 258 and 259.)

Mr. Carpenter: I will not refer to them otherwise, but simply have them in the record.

I also offer General Motors Exhibit—

Mr. Harsha: Pardon me, Mr. Carpenter. Could we have an identification as to the author of these memoranda?

Mr. Carpenter: Yes. No. 258 is a memorandum made by Mr. Frank Howard of the Standard Oil Company. This was sent to me—I got it from their files.

The memorandum of June 18, 1924, is a memorandum by Mr. Edward M. Clark of the Standard Oil Company. That is Exhibit No. 259. These are two Standard Oil documents.

Mr. Harsha: Thank you.

By Mr. Carpenter:

Q. I now refer you, Mr. Kettering, to Government's [fol. 3569] Exhibit No. 631 of September 8th, 1924, which is a letter you wrote to Mr. Sloan, and I will read this part:

"We went over to Pomeroy last week to investigate the possibilities of securing bromine and had a very profitable trip so far as getting a real understanding of the bromine situation. Our boys here at the Laboratory, are devoting their entire time to studying methods of extracting bromine from low percentage brine and we feel that, once this problem is out of the road, we are in shape to go ahead in very good style with the Ethyl Gasoline Corp."

And then the third paragraph:

"I thought you would be interested in knowing just what we were doing along this line because I am sure if the bromine problem is solved that the Ethyl Gasoline proposition can go ahead in good shape."

Now the Ethyl Gasoline Corporation had been formed in the middle of August, 1924, just before this, had it not?

A. Yes.

Q. And you were elected president?

A. Yes.

Q. And Mr. Midgley and Mr. Howard were vice presidents?

A. That's right.

Q. And there was another Standard Oil man that came in, Mr. Maxwell?

A. Yes, he was sales manager.

Q. What was the first thing you did after becoming president of the Ethyl Gasoline Corporation?

A. Well, I started to get in this bromine proposition which was one of our very difficult things.

Q. At that time what was the world production of bromine [fol. 3570] mine?

A. The world production of bromine was about 800,000 pounds of bromine per year, and, if you took a long range look at our problem then, we had to have something like 50 million or 60 million pounds a year, incidentally last year, I think we produced 125,000,000 pounds. So that this bromine proposition was a limiting factor. It was a plus bottleneck almost.

Q. Now, may I ask, who were the producers of bromine in this country?

A. Well, the Dow Chemical Company were the principal producers, and the brines up around Midland had a pretty good percent of bromine. I had gone up there and got Mr. Dow to drill new salt wells, bring the brine out and pump the brine down into some other salt wells several miles away, because they didn't want to lose the brine in order to strip off this little bit of bromine. Then we discussed with them the possibility of taking the bromine out of sea water.

Now, there is one pound of bromine in ten tons of sea water, so it is rather a thin mixture, and if you are going to take large quantities out, you have to be prepared to handle large quantities of sea water. And that process was later developed, and the main plant is at Freeport, Texas.

Q. Well, that is today it is there?

A. That is today. That is known as the Ethyl-Dow.

Q. But in 1924, you say that Dr. Dow told you that—

A. Well, I said, he thought that if we were going to get these large quantities, we would have to go to the sea, despite the fact that there was only one pound in ten tons of sea water.

Q. And what did he say about the percentage of bromine in the Michigan brines, as compared with the percentage of bromine in the sea water, if anything?

[fol. 3571] Mr. Harsha: I object, if your Honor please. It seems to me that counsel is unduly leading his witness.

The Court: Well, he should state the conversation.

Proceed:

By the Witness:

A. Yes, the percentage of bromine in the brines, that was mentioned here before, I think it was ten times as much

as in the sea, and I think some of the brines around Midland were up to one-half of one per cent. I have forgotten exactly, but it was very rich in bromine compared to the sea water.

By Mr. Carpenter:

Q. Did your laboratory in Dayton do any work on the sea water?

A. Yes, I had 25 barrels of sea water sent up from Atlantic City just before I went to Europe to investigate the possibilities of getting bromine from over there, and our boys had started the process of extracting the bromine from the sea water as developing a principle.

Q. Had anybody up to that time ever before extracted bromine from sea water?

A. No, not that I knew of. We couldn't find a reference to it.

Q. You said something about going to Europe. Did you go to Europe in the fall of 1924?

A. Yes, I went over there with two things in mind, the brines of the Dead Sea which have quite a lot of bromine in them, because I think the surface of the Dead Sea is 125 feet below sea level, and the water has evaporated down to the point, forming tremendous quantities of sodium chloride. That is common salt, and that is precipitated out. [fol. 3572] Also, the French had a bromine plant down in North Africa where they had made a lot of bromine during World War I for tear gas, and I went over there to investigate both of those, and to see if we could do anything to accelerate this production of bromine.

You see, the bromine in these cases were both from naturally evaporated sea water. You get an automatic concentration from evaporation of the sea water from the sun. There were great salt flats down in the Mediterranean Sea, and if you dug a well in the salt flats you would get about one pound of bromine per barrel of water.

Q. And did you go to the Dead Sea?

A. No, I didn't. We got someone to go over there for us. I have forgotten who it was right now.

Q. From what company was he?

A. I think from the du Pont Company.

Q. Do you remember his name?

A. No, I don't. Mr. Chase was the man who got him for me. He was one of the European representatives, and he spoke French very fluently, and he went along with me down to Tunis.

Q. From Tunis, where did you go?

A. We came back to Paris from Tunis, and we made a very thorough survey. You could get any quantity of bromine that you wanted down there. You see, there is a flow of sea water into the Mediterranean of about three or four miles an hour, and consequently the concentration of salt in the Mediterranean or any of those seas is higher than it is in the open ocean, and down along the Mediterranean Coast there you have these shallow bays, and you get as much evaporation as two or three inches a day in the water, and finally they get filled up completely with salt, and I say if you dug a well in that, there is where you get the [fol. 3573] rich bromines, because bromines are the last materials to be crystalized out.

Q. When you were in Paris did you get an invitation to go and visit Germany?

A. Yes, we went over to the Badische Aniline and Sodium Fabric Company and we went over there to see Dr. Bosch who was the head of that, and who was very much interested in discussing with us anti-knock materials, as they felt they had a material over there that was better than tetraethyl lead.

Q. Had you ever met Dr. Bosch before?

A. No, I hadn't, and we went there and had a very interesting discussion, and he naturally was very much interested as to how we would be in the chemical business at all, and he told me that I had done him a very great favor because I had put his uncle, Robert Bosch, out of business in the United States and he said, "I never did like him," but he said, "I cannot understand what you are doing in chemicals," and he said, "The thing that worries me is how you fellows stumbled onto this tetraethyl lead."

Now, I said, "You being one of the great chemists of the world, how would you set the hurdles for people to stumble over?"

He said, "That is what worries me."

I told him how we did it with the atomic table and pin board.

He said, "That might work in America, but I could never get my fellows to do it that way."

And the thing they had to propose was a thing known as iron carbonyl.

Q. Did he tell you what his material was?

A. No, he wouldn't tell me, but he let me try some of it [fol. 3574] out on an engine, and we, knowing the characteristics of these different elements, we were sure—he said, "There is no use to tell you because you wouldn't know," but then he said that it would infringe one of our patents, so I couldn't understand why we wouldn't know if it would infringe one of our patents.

It was a metallo organic compound of iron.

Q. Did you tell him you knew—

A. I told him before I left that it was iron carbonyl, and about two days after that they announced in a German technical paper that that is what it was. It didn't work out because there was the same difficulty that we had when we burned out the lead oxide. That particular iron oxide was a very fine rouge, so it acted as a lapping compound in that part of the engine.

Q. You said that the iron carbonyl burned to a lead oxide?

A. No, I said it burned to an iron oxide, and red rouge, that they use in lip sticks, and that kind of stuff is all very largely iron oxide.

Q. And what did that do to the engine?

A. I say, it lapped out parts of it, and particularly in the chains that were used in the front end, they used to go bad in just a couple of thousand miles and it would be lapped out.

[fol. 3575] By Mr. Carpenter:

Q. Now, Mr. Kettering, when you were in Europe on this bromine search, did you get news of anything happening in this country?

A. Well, we got the news they had had a very bad explosion [fol. 3576] in the Standard Oil Company's Research Department, where they were trying out this new process of making tetraethyl lead.

Q. You said "explosion." Is that what the newspaper reported?

A. I think they called it an explosion.

Q. And did the newspapers in Europe tell the story of—

A. Yes, the paper in Paris said—what is it, the Tribune?—it is a small American newspaper published in Paris. They had word of it there, and then Mr. Sloan sent me a cablegram regarding it.

Q. When you returned from Europe, do you remember when it was?

A. No, I imagine it was the latter part of November, perhaps, when I got back.

Q. Had your boys in the laboratory succeeded in their work on sea water?

A. Yes, we had. As I say, I sent up 25 barrels, and we had developed a method of extracting bromine fairly satisfactorily.

Q. How did you take it out, in what form?

A. Tribromanalin, I believe it was, and it was a method of reacting bromine with aniline, and then filtering the sea water away from it.

Q. And who put that process, if anyone, into a semi-works plant?

A. Well, we made a semi-works plant. We had this twenty-five barrels, and then we made some surveys, and then later on we developed—well, I think it would be more of a semi-works plant—the Steamship “Ethyl,” which we worked out with the du Pont people. In other words, here was a steamship where you put a complete recovery thing, where you could go out and anchor and stay in this particular kind of water, and while the sea water is relatively uniform when you get close to the coast it is modified considerably by organic materials from the sewer drainage from the coast.

[fol. 3577] Q. Who built the chemical factory into the steamship?

A. The du Pont Company.

Q. And who operated the steamship?

A. The du Ponts.

Q. For which company did they do that?

A. They did that for General Motors Chemical.

Q. That, or the Ethyl Corporation?

A. Well, it was the Ethyl Corporation then, yes.

Mr. Carpenter? I just wanted to get the sequence.

Q. Was the operation of the chemical factory in the steamship on the ocean a success?

A. Yes, it worked out very good. We recovered quite a lot of bromine that way, and proved that the thing could be done.

Q. Now, following the operation of the Steamship Ethyl, was there a large plant built to produce tribromanglin?

A. No, there was not.

Q. What happened about that time?

A. Well, we were delayed for some reason, then the Dow Chemical Company composed a modification of the process.

Q. That was several years later, was it not?

A. Yes.

Q. I want to keep you right-down to the sequence. What happened?

A. There was quite a little delay between the Steamship Ethyl and the actual making of the sea water recovery plant.

Q. Do you recall the time when the Ethyl Corporation shut down its business?

A. Oh, yes, very well.

Q. That was when?

A. Well, I have forgotten exactly when it was, but that was right after, or shortly after, the Bayway difficulty.

[fol. 3578] Q. Now, you were president of the Ethyl Corporation, the Ethyl Gasoline Corporation, up until what time?

A. I think up until about I think it was about four or five months was all.

Q. After you got back from Europe?

A. I think it was, yes.

Q. What have you to say about the sales of ethyl after the Bayway disaster?

A. Well, it was taken off the market in every place but Ohio, the State of Ohio, because they had to keep some control, some sense of control, and it was taken off the market and a committee was appointed by the Surgeon General.

Mr. Carpenter: Right there, I would like, if the Court please, to offer General Motors Exhibit No. 261, which is Public Health Bulletin No. 158.

(Said document so offered and received in evidence was marked General Motors Exhibit No. 261.)

Mr. Carpenter: This is the proceedings of a conference to determine whether or not there is a public health question in the manufacture, distribution or use of tetraethyl lead gasoline.

This was prepared by direction of the Surgeon General.

I will only refer to the fact that in this bulletin it lists the organizations, industrial agencies and Government Bureaus represented at the conference, many universities, public health authorities, and labor unions, and so forth.

I will read from page 7, the first paragraph:

"The meeting was called to order at 10 a. m., May 20, 1925, at the Bureau of the United States Public [ols. 3579 3581] Health Service (Builer Building, Third and B. Streets S.E.), Washington, D. C., by Surg. Gen. H. S. Cumming, presiding."

Mr. Harsha: Pardon me, Mr. Carpenter. We have no objection to the introduction of that document, your Honor, but you will note it is merely an excerpt from this report as indicated on the last page.

I do not wish to insist that the whole document be placed in evidence. I would like to ask that the Government be given an opportunity to see the complete document.

Mr. Carpenter: Well, we could have furnished it before had they made a request; we will be very glad to make it available to you, Mr. Harsha.

Mr. Harsha: Thank you.

Mr. Carpenter: You see, these documents are out of print, but one of them I had and the second one I shall offer is a very difficult one to find.

Mr. Harsha: Suppose we discuss it after court?

Mr. Carpenter: We have here a statement by Mr. Kettering, President of the Ethyl Gasoline Corporation. A statement by Mr. W. F. Harrington, General Manager of the du Pont Company, and I will not burden your Honor with reading those statements or anything from them, but

they just explain why the Ethyl Gasoline Corporation was formed, and why the work was done on tetraethyl lead, and what was hoped to be accomplished.

I now offer, of your Honor please, General Motors Exhibit No. 262, this being Public Health Bulletin No. 163, published in June, 1926, by the Surgeon General.

[fol. 3582] By Mr. Carpenter:

Q. Mr. Kettering, following the report of the Public Health Committee on the adoption of the rules and regulations by the Surgeon General did the Ethyl Gasoline Corporation resume business?

A. Yes, it did.

Q. You remained a director of the corporation, did you not?

A. Yes.

Q. Until how long?

A. Well, I am still a director of it.

Q. You resigned as president just before the Surgeon General's investigation, did you not?

A. Yes, I did.

Q. Did you not?

A. Yes, I did.

Q. Did you attend the meetings of the Board frequently after that?

A. I did for quite awhile, and then we got busy on some other things, and there were a few years in there I didn't attend very often. Maybe five, six or seven years ago I started back on the Board again pretty regularly because we were coming along with these new engines, and the importance of anti-knock gasoline had been given another very great boost.

[fol. 3583] Q. May I interrupt to ask you this: How did the two partners of the Ethyl Corporation, Standard Oil of New Jersey and the General Motors Corporation, the two corporations that owned all its common stock, how did they accept the Ethyl Gasoline as a product?

A. Well, they accepted it as a modifying agent, of course, in the making of better and more useful fuel gas.

Mr. Harsha: I would like to object to that, your Honor. I just don't understand what that question means.
The Court: Sustained.

By Mr. Carpenter:

Q. May I ask this question: Did you have any trouble in the early days of having the divisions of General Motors adopt ethyl gasoline?

A. Yes, we did. I think General Motors had in every one of its instruction books that the guarantee was off the car if they used ethyl gas, and, of course, Standard Oil of New Jersey wouldn't make and sell any of it.

Mr. Carpenter: I now offer, if your Honor please, G. M. Exhibit No. 93, a letter from E. A. Rudigier to G. W. McKnight, on Standard Oil Company of New Jersey letter-head.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 93.)

By Mr. Carpenter:

Q. This reads:

"Replying to your telegram of today, we wish to advise [fol. 3584] as a matter of record that beginning this afternoon our shipments of ESSO from Baltimore to our entire territory will contain lead."

That is dated March 9, 1929.

Prior to that date, Mr. Kettering, had the Standard Oil product contained lead for some time?

A. I think it had some, I don't know, but not very much. This was the first public announcement of it.

Mr. Carpenter: I now offer in evidence, if your Honor please, G. M. Exhibit No. 266, which is the chart behind you, Mr. Kettering.

I wish you would tell his Honor what has been accomplished for the automobile in the intervening years from the date of tetraethyl lead going on the market until the time covered by that chart.

Mr. Harsha: Pardon me, Mr. Kettering.

Your Honor, I think the Government would like to object to the introduction of this document.

It is headed "Trends in Passenger Car Engine Design," apparently over a period from 1920 to 1950. It has to do with the horsepower per cubic inch displacement, the maximum brake horsepower and compression ratio; all of which have to do with characteristics relating to the engines, and I fail to see any relevance of this document to the issues in this case.

It certainly is not in dispute that tetraethyl lead and its use has resulted over the years in certain changes in automobile engines, but I fail to see how it goes to any of the merits or substantive charges in this litigation.

Mr. Carpenter: If your Honor please, I would like to point out that from the testimony of Mr. Sloan, the testimony [fol. 3585] of Mr. Irene du Pont and Mr. Kettering, the purpose of the General Motors Corporation in working on this compound was to improve the motor.

They have said the purpose of General Motors was not to use tetraethyl lead as the ultimate thing. They were not concerned with the profit in it. They were concerned with its effect on motors, the desirability of building a better motor and a better car for the benefit of the public.

I think the testimony is relevant and material for the purpose of showing whether or not they have accomplished what was designed, which will corroborate the story or the testimony that General Motors' purpose was not to make a profit out of tetraethyl lead, but to produce the results which are partly shown on these charts.

The Court: I think it is admissible. The objection is overruled.

(Said document so offered and received in evidence was marked General Motors Exhibit No. 266.)

[fol. 3586] By Mr. Carpenter:

Q. Mr. Kettering, just before court recessed, you were going to give us some explanations about the chart, GM Exhibit No. 266.

Will you explain what compression ratio means; what it is?

A. Well, compression ratio—supposing we took a cylinder here that was a foot long, and we moved the piston up six inches. That would be two to one compression ratio.

Now, if we moved it up, say, until eleven inches had been taken up, that would be 12 to 1.

It is a ratio of the total volume that you start with to what you have left when the piston is at the top. That is very important because it is the basic principle in producing economies in the use of gasoline.

[fol. 3587] Q. Now, will you tell his Honor what the compression ratio was when you started putting tetraethyl lead in gasoline?

A. Well, as I mentioned before, in the early part of the industry people were not particularly interested in the economies of engines, so when we started in 1925, the compression ratio was four and one. Of course, the economy wasn't very good.

Now all that this chart shows you is that we have continually climbed up. If we had the last one, it would be up in about here.

Q. In other words, for today's cars, what is the average compression ratio?

A. I think it must be about half a compression ratio above what it shows here. This is 7.18. I think you could say safely 7.6 or 7.7.

Now that is only an indirect measure of the economy of engines. These other things came along more or less as a matter of course.

The reason that I wanted to show you this chart is not for the technology that is involved in it, but here is what we were thinking of when we started down here that could be done. The important thing is the result of that.

This chart shows you that by virtue of raising the compression ratio we save the equivalent of all the gasoline used in these Western states as of the date of 1926. I mean that if we were working on the same rate as 1926 today, here is what that result would be in savings.

This is the main thing that we were thinking of in that specific industry of tetraethyl lead. This is what we were working for.

Mr. Carpenter: I now offer the chart, which is GM Exhibit No. 263.

[fol. 3588] Mr. Harsha: I would like to object to its introduction in evidence, your Honor, the same objection as to the preceding chart:

I fail to find any relevance at all to the issues in this case. It seems to me it is completely irrelevant that 25 billion less gallons of gasoline will be used in 1952 than would have been used in 1925 to do the same amount of driving.

I fail to see any connection to this case. It is not in dispute that the addition of tetraethyl lead as an additive to gasoline acted as an effective anti-knock, and if that is all that this is offered for, it seems to me it is a rather cumbersome method of going about it.

Mr. Carpenter: It seems to me, your Honor, that what Mr. Harsha says is true to the extent that you know that tetraethyl lead has improved gasoline. We think it important to our case to show just what that means.

We have shown here graphically by this chart that savings of gasoline have resulted from this invention which amount to the gasoline consumed by all the vehicles in 25 of the western states shown on the map. We think it is quite important to show what Mr. Kettering was aiming at; what Mr. Sloan was aiming at, when he supported his work—that was the result that we have depicted here on this chart. It completes the picture of this research that I think should be before the Court.

The Court: Objection overruled. It is received.

(Said document so offered and received in evidence, was marked General Motors Exhibit No. 263.)

[fol. 3589] By Mr. Carpenter:

Q. Mr. Kettering, I would like to ask you this: Have the maximum results been obtained up to this time by the use of tetraethyl lead in gasoline?

A. Not yet. I suppose we have maybe 25 or 30 percent improvement yet that will take a matter of maybe four or five years before you get in position where that final, say, 25 or 30 percent can be utilized. That is making very great progress with the fuel companies and the motor companies, everything.

Q. How do you account for the fact that this rise in compression ratio has been gradual and you did not jump to it

immediately upon the discovery of tetraethyl lead in the building of your engines?

A. There were innumerable reasons why that couldn't be done. You had the mechanical thing; you had the distribution of the fuel; you had all sorts of obstacles to overcome in that.

Q. When you increase the compression ratio suddenly, does that affect the other parts of the engine?

A. Oh, yes. Unless the engine is built for it, you can't change the compression ratio; so it meant an entirely new design of engines from top to bottom.

Q. Prior to the year 1925, which is shown at the bottom of that chart, were any statistics kept by any of the manufacturers of automobiles as to what the compression ratios were?

A. I don't think so. I don't think our records show very much of anything.

Q. Did you not look for that in the technical work in your laboratory in preparing this chart?

A. Yes. There wasn't anything. There have been no records of it. I say nobody had thought in the terms of the economics of fuel usage.

[fol. 3590] Q. Mr. Kettering, in going to the du Pont Company and asking them to make tetraethyl lead by the process you had developed, and in making the contract with them of October 6, 1922, to what extent were you actuated by the fact that the du Pont Company was a stockholder in General Motors?

A. Not at all.

Q. Did you give any thought to that?

A. No, sir.

Q. Why did you go to them at that time?

A. Well, because we had worked with them a little bit and they were the best chemists that we knew of in the country. We knew the men from chemical associations, and so forth.

Q. When did you first meet either P. S. du Pont or Irenee du Pont or Lamont du Pont?

A. I met Mr. P. S. du Pont first when he became president of General Motors.

Q. Had you before that known either Mr. Irenee du Pont or Mr. Lamont du Pont?

A. No, I had not.

Q. You did meet them after?

A. Quite a little bit later, yes.

Q. Had you known, prior to Mr. P. S. du Pont becoming president of General Motors, any of the outstanding chemists of the du Pont Company?

A. I had known Dr. Reese who was then head of the Research, and Dr. Stine.

Q. Dr. Stine, what was his position?

A. I think he was assistant director there.

Mr. Carpenter: We will now leave the subject of tetraethyl lead, if your Honor please, and address Mr. Kettering's attention to the subject of "Duco" and paints.

At this time I would like to refer Mr. Kettering to General Motors Exhibit No. 105 which is already in evidence, for the purpose merely of fixing the date regarding this report to Mr. H. H. Bassett, vice-president.

[fol. 3591] By Mr. Carpenter:

Q. Vice-president of what, Mr. Kettering?

A. He was vice-president of the Buick Motor Company.

Q. I wish you would tell the Court, Mr. Kettering, when your attention was first directed to the problem of painting automobiles.

A. Well, I imagine it was about 1914, or 1915, or 1916, in there some place.

I had recognized if you were going to go to closed bodies—now, we were not a part of General Motors then—that we would have to do something about the method of painting, so I hired a fellow by the name of Mougey who was then a chemist of the Lowe Brothers Paint Company in Dayton to come over and work with me in this little laboratory we had for the sole purpose of studying the question of the increased drying rate of paint, because that was the thing that was in the road. The paint dried very slowly.

Q. What company were you speaking of before?

A. From the Lowe Brothers Paint Company of Dayton, Ohio.

Q. He became an employee of what company?

A. I think it was the Dayton Metal Products. It became a part of the Dayton Metal Products.

Q. Hadn't you, at that time, had occasion to apply paints to anything outside of your self-starters?

A. Well, no, we were not thinking of that. We were thinking of the paint as a long range problem.

Q. Had you ever, in any of your work, used any lacquers?

A. Well, we used it in the airplane business because in those days, we manufactured a lot of airplanes, and of course, in those days, all airplanes were covered with a fabric, and you put this dope on, and it shrunk the fabrics and made them waterproof.

[fol. 3592] Q. What did you put on top of the fabrics, what material?

A. It was either nitrocellulose or cellulose acetate, a dope that they called lacquers.

Q. Were there any pigments?

A. They did not have any pigments in them at all.

Q. What company of yours was it that manufactured airplanes in the First World War?

A. It was the Dayton-Wright Airplane Company.

Q. When you came over to General Motors in the winter of 1919, December I believe it was, did you give any further consideration to the painting of automobiles?

A. Oh, yes.

Q. What was the problem at that time?

A. What we wanted to do was increase the drying rate. I think the Cadillac was using something like 32 or 33 days to finish a Cadillac automobile. Buick and Chevrolet took about 12 or 14 days. The paint was just exactly like the paint that was on a piano. They were not very durable outdoors, anyhow, and we were extremely interested in a paint that could be put on an automobile in a much shorter time, because we were getting ready to go into closed bodies, just starting closed bodies, and it was impossible to see how you could use that paint unless we got a paint that could be used in the line, that is, as these bodies moved down the line they could paint them.

Q. You are speaking of the assembly line?

A. Yes, the assembly line.

Q. Did you take this matter up with any paint manufacturers?

A. Yes, we had a meeting of a number of paint—I suppose there were a half dozen different paint companies and paint applicators, that is, foremen of the paint de-

parlaments and paint chemists. We had a meeting in Dayton.

[fol. 3593] Q. Do you remember when that meeting was with reference to the date of December 1921?

A. No, I do not.

Q. Was it before or after that?

A. I think it was before.

Q. What took place at that meeting?

A. We explained to this group of paint people what our problem was, why we wanted to talk to them and get their interest in the thing, and greatly reduce the time it took to finish an automobile.

Q. How long did that meeting last?

A. Well, it lasted almost all day. So they agreed, the paint manufacturers agreed it might be possible to take three days off of the Cadillac time, and take two days off of the Buick to finish them, but they did not see how you could do much more than that. And just as our meeting broke up, I told them that was not good enough. So they said, "Well, how long do you think it ought to take to finish an automobile?" And I said, "One hour."

Of course, I cannot say here what they said, but they thought it was a perfectly preposterous point of view. We said that was not arbitrary, the figure we had. It looked as though if we could get that, it would be ideal.

Q. At that time, what space was required in your plant to store the cars during painting?

A. You could see what you had to do, if it took 14 days to finish an automobile. You had to have storage facilities for 14 days, and in addition to that, you had to take some certain number of them out every day and put on other coats, so it was not very good. A paint job was a perfectly enormous undertaking in those automobile companies at that time.

Q. Now, following the meeting when the paint manufacturers told you something that you cannot repeat, what [fol. 3594] did you say?

A. I said it does not make any difference what you gentlemen think about it, we still have this problem, and I began to look around for something.

Now, we knew that the lacquers on airplanes dried fairly fast. We would just spray the stuff on and it dried very

quickly. I was down in New York one day, and I was walking up Fifth Avenue; I think it was in Tiffany's window—now, none of these lacquers had color. They simply dried. I saw a little pin tray that looked like it had lacquer with pigment in it, so I went in and got one, and I found where the tray was made, and I went to that manufacturer. He said he had gotten this lacquer over in New Jersey, in Newark, I believe it was, so I went over to see the fellow who made it.

He had a little shop in the back of his residence, and I told him I had the pin tray and I wanted to know if he could make me a quart of that material.

He said no, he had never made that much at one time. He had been subsidized by Warner Brothers Picture Company to see if he could not find a use for their old films. So he said, "What do you want with a quart?"

I told him I wanted to finish an automobile door. He said, "You cannot do it."

I said, "Why?"

He said, "This stuff dries so fast, it will dry before it gets to the door, and the pigment will blow away in dust."

And I wanted to know if he could slow it down. He said he didn't think he could.

So there I had in one case the old paint that could not be accelerated, and a new paint which could not be slowed down, and that is what we started with when we began work on the thing that finally ended up in the so-called "Duco."

Q. What did you do after you were confronted with that problem? Here you had a lacquer that dried too fast. What did you do?

A. Well, I came back, and went to one of our boys, and we tried to get some of the paint companies interested in it, to manufacture it.

We succeeded in getting the du Pont people interested in it, to try to make some of this stuff.

Q. Had they made some of the lacquers you had used?

A. Yes, they had made some of our lacquers.

Q. That were used in the first world war on planes?

A. Yes, they were familiar with it. The lacquer thing

was well known. The difficulty had been to get these lacquers to hold the pigment so that you could use different colors.

To put a colored lacquer on, a lacquer that had color in it, that had been a difficult problem.

Mr. Carpenter: If the Court please, I offer in evidence General Motors Exhibit No. 267 which is a part of the factory correspondence written by Mr. Mougey to Dr. Clements.

By Mr. Carpenter:

Q. Mr. Kettering, following your visit to the man in Newark, and Mougey getting in contact with the du Pont Company, did they show any interest in helping you out on this problem?

A. Yes, they did.

Q. Did they report to you that discovery Mr. Sloan and Mr. Irenee testified about on the 4th of July, 1920?

A. Yes.

(Said document, so offered and received in evidence, was marked General Motors Exhibit No. 267.)

[fol. 3598] By Mr. Carpenter:

Q. Now, Mr. Kettering, following that report, what did you do?

A. Why, we had a paint and varnish committee appointed to look into it. We also got in touch with the du Pont people to see if they could change these things. One of the difficulties we had was the so-called primer or undercoat that would absorb from the top coats, and it would crack, but we immediately started to set up a program that would cover every phase of this finishing business, because it did look as though we could get what we had started out to ask for, if we set up an organized method of procedure.

Q. Well, what were the first materials that du Pont furnished? What were their characteristics?

A. Well, some of them cracked; some of them didn't carry color too well, and well, it was just like you should expect on the first of anything; I mean this was all new to everybody.

Q. Did you have any difficulty in your own General Motors divisions in having this new material put on?

A. Oh, quite a lot. I mean—you see, the paint techniques had not been changed for a great many years, and had been drafted as the highest standardized procedure [fol. 3599] of anything that had been used, and when we tried to get some of our divisions to try some of the new paints, they wanted to put them over the other coat. You see, the bodies used to be made by Fisher, and then they were given a priming coat. That was sort of a—well, some called it primer, and some called it lead. It was a reddish brown coat that they put on for protection of the metal, and if you tried to put some of these new lacquers on top of that, it wouldn't adhere, and it fell off, so it was necessary—and Mr. Mougey mentioned this there in his report—it was necessary to get some way or some undercoat that would stick to the iron or steel on one side, and also would bond satisfactorily with the color or coats that went on top.

Q. Could you have put this lacquer on top of regular paint, old type paint?

A. No, we couldn't do that at all. That is where we had a good bit of our difficulty. We had so much difficulty in trying to get experimental cars, that one of our divisions had made more of a certain kind of body than it needed at the end of the run; and they had scrapped about maybe fifty or a hundred of them and thrown them in an old stone quarry at Pontiac, Michigan; and we took some of those out of the stone quarry and straightened them up, and sand-blasted them, and put on a proper priming coat and proper finishing coat, and that is the way we interested our divisions to see what you could do if you would forget the old primer coat.

Q. And prior to that time what condition had the bodies come in from the Fisher Body Division?

A. They had the regular primer coats on. That had been a practice all the time.

[fol. 3600] Q. And those primer coats had to be removed before you could successfully apply the new "Duco"?

A. Yes, and the way we convinced them that that had to be done was by starting out with bodies that we could sand blast and build right up from the metal.

Q. Did your organization or your research organization

do all of that work alone on the paints, or did you have this cooperation with the du Pont men as mentioned in Mr. Mougey's report?

A. Yes, we had the cooperation, because we were trying to push this thing just as hard as we could, because it was a very important thing.

Q. Now, following the du Pont Company getting out a satisfactory grade of "Duco," was it adopted by your divisions?

A. Yes, some of them.

Q. Do you remember the year when the General Motors cars all adopted "Duco"?

A. No, I don't. We had contacted some of the other paint companies, the Rinsed-Mason Company, and I knew Mr. Mason and have known him for a long while in some other connections. And we got them in, and I believe we also did some work with the Forbes Paint & Varnish Company.

Q. They later on developed lacquers, did they?

A. Yes.

Q. And some of your divisions, one or two bought those?

A. Yes.

Q. From that time forward, Mr. Kettering, have you conducted any research on paint?

A. Yes, I put in a laboratory down in Florida, about twenty-five or twenty-six years ago, and we have had continuous work on this ever since, and tremendous improvements have been made, and it was through these laboratories that we had down there that I developed the complete set of instrumentation that we used there, that we have found out a lot of things, and that has been a constant improvement over the twenty-five years.

[fol. 3601] Q. Constant improvement in what?

A. In these paints.

Q. So is the "Ducó" that is on the market today the same "Duco" that was on the market in 1925?

A. The same general principle, but there have been a lot of changes made all the way through.

Q. Has your research conducted over this 25 year period contributed at all to that?

A. I imagine so. We published everything we found on that, and so everybody had the use of it.

Q. What have you to say about these competing products? Do all automobile manufacturers use "Duco"?

A. No. There is another material known as Dulux, and I imagine there are all sorts of combinations there. But we have always felt that we were set up to handle the "Duco" type thing better than we could the Dulux, although our whole Canadian output is finished in the Dulux, so we haven't been partial to the thing at all.

Q. From a research standpoint and as part of an organization that has made a study of these various coverings on automobiles over the years, what have you to say as to the quality of the "Duco" used by General Motors as against other compounds?

A. Well, of course, you can get all sorts of opinions on that, but we have run every year, in two or three cities, a check of test of, say, 1,000 or 1,500 cars, in a city like Chicago.

The committee that we have on that is four or five paint manufacturers, four or five of the applicators, that is, paint foremen and paint chemists and so forth.

We come into a city like Chicago, go to the Police Department and get permits to go into the used car lots and take a [fol. 3602] look at these cars, and we present our credentials to the used car lot man so he knows we are not trying—and we have examined about three or four thousand cars a year under that system.

We still feel that the "Duco" paint is better. Now these paint manufacturers that we have make both kinds, so they don't care which kind we use. But it shows up that it is still very good, if not the best thing there is.

Q. Did you have a competitor speak to you one time about the quality of General Motors paints as against his?

A. Well, he said that he was always interested to know why the two cars, his and one of ours, that had exactly the same specifications, sold at practically the same price, and if you gave them exactly the same use, you could still get more for our car in a used car lot than you could for his.

He said, "What do you think the reason for that is?"

I said, "I think one of the reasons is the paint."

Q. Mr. Kettering, I want to call your attention to the subject of refrigerants.

When did you first start to work on a refrigerant?

A. We started way back—I would say I started with what is now Frigidaire back about 1914, 1915, in there, getting some of the early refrigerating machines.

We used what everybody used for these refrigerating gases, and the particular one we were working with was sulphur dioxide. It is a pretty satisfactory refrigerant, but it is very nauseating if it escapes.

The Dayton Metal Products' main offices were in a house down on Ludlow Street. In fact, we had two houses there. One was our laboratory. I took the wallpaper off the dining [fol. 3603] room and papered that with white paper, and we laid off what they call the table of critical pressures and temperatures of all the known refrigerating gases.

Right where we would like to work, there wasn't any. So Midgley and I were talking about it one day, and we said "If we ever get a chance, we would like to make a refrigerant gas that would fit right into the middle of that place there, but it ought to be a non-toxic, non-irritating material." But we weren't able to get to it at that time because we had these fuels and all that kind of stuff coming along.

Q. Why was your interest in fuel greater than it was in the refrigerant?

A. Well, here is the thing: You use about the weight of your automobile in gasoline a year, and that was the thing that was limiting our automobile development. We were interested in getting that started first.

We had a limited number of men, and we tried to rate our projects in terms of what they could do. In other words, we kept the paint and fuel at about the same parity. Then we had refrigerants, and we had some synthetic rubber study.

We rated those in terms of their values and took them in order, depending upon the commercial importance.

Q. Now you have told us that occurred when you were with Dayton Metal Products Company, that was before you went with General Motors, therefore before December, 1919. When again was your attention called to the need of a refrigerant?

A. Well, it wasn't so much the need of a refrigerant, but there had been an accident up in Danbury, Connecticut. Somebody had punched a hole, used an ice pick—which was

quite common in those days—into a refrigerating tube in a mechanical refrigerating machine. The gas had leaked out and killed some people.

[fol. 3604] I used that then as a means of going back to our refrigerating outfit and saying, "Here is another indication of why it is so essential," because we had talked to them quite often about it.

Q. Whom did you talk to in the Frigidaire Corporation?

A. The chief engineer, and also Mr. Biechler, who then happened to be general manager.

Q. What did they say to you?

A. Well, they—

Mr. Harsha: Your Honor, may we have some identification as to the period of time we are discussing here? Counsel seems to be making a point.

Mr. Carpenter: This was about 1927 or 1928, was it not, about then?

The Witness: 1927 or 1928, yes.

Mr. Carpenter: That agrees with the date in your complaint.

Mr. Harsha: Thank you.

By Mr. Carpenter:

Q. What did Mr. Biechler say?

A. He said they thought they needed a new refrigerant. They were going to Germany and get a chemist the next year and see if they couldn't do something about it.

Then I recalled to him what we had done previously in setting up these studies and that we felt that we knew how to do the thing. He said, "Who will you put on the job?"

And I told him I would put Mr. Midgley and Dr. A. L. Henne on the job.

He said they wouldn't be acceptable to them because they would come to work in the middle of the night, and all that sort of thing. So I said, "We can fix that."

[fol. 3605] So I built a lean-to outside of the fence, at the Moraine City plant, and brought the services, like gas, electricity, and water, to that, and put them on a special budget so they didn't have to go into the refrigerating plant, didn't have to go through their guard system, or anything like that.

It was entirely an outside thing to which we made an appropriation, I think something like \$10,000, \$15,000 a month, and that was O.K.'d by the Frigidaire, and that was as far as they had to be disturbed about it.

I think it took about eighteen months after we started that before we got what is now known as F-12. I think that was one of the first ones.

Q. F-12 is called Freon, is it not?

A. Yes.

Q. What materials was that made of?

A. Theoretically you could start out with natural gas. Natural gas is one carbon—consider this a ball of carbon here, and four hydrogens on that.

Q. Could you illustrate that on a chart? I think this might help the court in understanding this, if you will put it up there. I think it can be done very quickly and will be helpful.

A. (Demonstrating) Say that represents the carbon, and you have four hydrogens on here like this. That is the fundamental of natural gas.

Now, these hydrogens can be substituted with other materials. One of the common refrigerants that we had, we took off say one of the hydrogens and put a chlorine on there, the symbol being Cl. That is known as monomethylchloride. Two on is called dimethylchloride, and that was one of the ones that was in that Danbury machine.

Now, if you put three chlorines on here that is chloroform. If you put four on them, that is carbon tetrachloride, which is a fire extinguisher.

[fol. 3606] So what we did in the work on Freon was to substitute fluorines in place of some of these chlorines, and the rather complicated technical name they have for F-12, is difluorodichloromethane. Natural gas is called methane.

So that is all it comes out to be. It is just the carbon of a natural gas molecule having two fluorines and two chlorines substituted for the hydrogens.

Q. Mr. Kettering, had anybody before ever used, to your knowledge, any fluorine compound in any manufacture?

A. Well, they had used hydrochloric acid and things like that, but in an organic combination like this, so far as I know, we were the first people to use it. Every kid knew about fluorine as hydrochloric acid, and knew it would etch

glass, but people were rather afraid of it, whether there was any reason for it or not, but so far as I know this was the first attempt to use fluorine in organic combinations.

Q. And you used it in combination with chlorine?

A. It wouldn't make any difference whether it was with chlorine or not, because they had been using chlorine in substitution products, as you can see there, for quite a long while.

Q. Was chlorine a poisonous compound?

A. Yes, it is. It is usually the basis of all your insecticides.

Q. Now, after the method of making Freon was discovered down there at Dayton at the Moraine City plant, did you bring anybody in consultation on the manufacture?

A. Yes, we got in touch with some of the boys down at du Pont.

Q. Who invited them up?

A. I did, or Mr. Midgley invited them up at my request.

Q. Did you consult with them?

A. I was there at the first meeting.

Q. Do you remember what you said to them?

A. Well, I don't remember exactly what I said to them, [fol. 3607] but what we wanted to do was get their opinions and see whether they could manufacture this for us.

Q. As a result of that, Kinetic Chemicals was formed, and manufactured the Freon?

A. Yes.

Q. Now I would like to ask you, Mr. Kettering, whether you ever did any work in your laboratory at Dayton on synthetic rubber?

A. Yes, we did some work before. Along about the war time, we made a study of synthetic rubber and did a little bit of work on it. As I say, we figured, oh, between 25 and 50 pounds of rubber per year per car, and there were a lot of good rubber companies, so that was really the least important one that we had.

Then, I imagine, it was around 1927 or 1928, there was a Russian by the name of—I think it was Ostromilinski—wrote a paper. It was published over here, and in it he said that he did a certain thing, which we had tried once and couldn't get to work.

We picked the thing up under special appropriation and

tried that out, using some of the techniques that we had used in the fuel. But that was as far as it went.

Q. Was the manufacture of synthetic rubber or the devising of a method of making synthetic rubber ever a research project in General Motors Research organization?

A. No, not as such.

Q. Where was Midgley's work done on that?

A. Well, I don't remember just exactly which laboratory it was done in at that time.

Q. It was not done in your laboratory?

A. No, it was not done there.

[fol. 3608] Q. Did you ever hear, until this suit was brought, about a letter written by Mr. Lammot du Pont to Mr. Sloan objecting to Mr. Midgley doing any work on synthetic rubber?

A. No.

Q. To your knowledge has the du Pont Company ever objected in any way to the research work you were doing?

A. No.

Mr. Carpenter: You may cross-examine.

Cross-examination.

By Mr. Harsha:

Q. Mr. Kettering, you have been a director of the General Motors Company since December, 1920, I believe, according to the records in this case. Does that correspond with your recollection?

A. Roughly so, yes. I couldn't say exactly when it was.

Q. According to the record we have, you became a director December 30, 1920, and continued up until the filing of this complaint, as a matter of fact, up until 1952 as a director. Are you still a director?

A. Yes, sir, I am.

Q. In your direct examination, Mr. Kettering, you touched upon a number of companies located, I gather, principally around Dayton, Ohio, with which you had some connection.

Would you state exactly with what companies you had a connection either as an officer or as a stockholder in the period, say, 1919?

A. Well, it went back before that. The first one in Dayton, the old Delco Company, that was the lighting, starting and ignition. Off of that we branched out into the Delco Light Company, which was farm lighting. They made the farm lighting equipment, and it was in that organization that we started the refrigeration work.

[fol. 3609] Then I also was interested in the Dayton Metal Products Company, which manufactured airplane parts and fusés and things of that sort, and the Dayton-Wright Aeroplane Company, which manufactured airplanes for the Government.

Q. Now, did you ever hear of the Dayton Engineering Laboratories Company?

A. That is the Delco.

Q. That is the same thing as Delco?

A. The Delco, Dayton Engineering Laboratories Company, that is the initials of that.

Q. Now, was the Dayton Engineering Laboratories or the Delco Light Company also known at one time as the Domestic Engineering Company?

A. The Delco Light Company was known as the Domestic Engineering Company.

Q. And the Dayton Engineering Laboratories Company, was that a part of Delco Light?

A. No. The Dayton Engineering Laboratories Company was the original company that we started for the manufacturing of automobile equipment. That is the Delco lighting, starting and ignition.

Q. Which was the company that was purchased by United Motors, do you recall?

A. The Delco. That was the automobile parts business that was purchased by them.

Q. That was purchased approximately in the middle of 1918, was it not?

Pardon me. Strike that question.

A. I don't remmeber the date when that was. But that was before—I thought it was earlier than that.

Q. Yes, you are right. I made a mistake. The Delco was merged into United Motors first, was it not, about 1916?

A. Yes, that is more nearly right.

Q. Then later on United Motors was acquired by General Motors in 1918?

A. That is right, sir. That is right.

[fol. 3610] Q. And you remained during those periods with United Motors, during the period 1916 to 1918, did you not?

A. Well, as general manager of the Delco Company.

Q. And then in 1918 when United Motors was acquired by General Motors, you went then into the General Motors organization, did you not?

A. That is right, yes, sir.

Q. What was your position in 1918 after this acquisition?

A. I went in as general manager for Delco.

Q. Now, during the period prior to December, 1919, did the Dayton Metal Products Company have any sort of arrangement, formal or informal, with General Motors?

A. No.

Q. Did the Dayton Metal Products Company keep General Motors informed as to the research work which it was doing on fuel?

A. Well, only through me. I mean it was not any formal thing because nobody was interested in it yet. Really the Dayton Metal Products was not interested.

For the first three years I paid for the research out of my own pocket.

Mr. Harsha: Will you show Mr. Kettering Government's Exhibit No. 599, please.

By Mr. Harsha:

Q. Mr. Kettering, I draw your attention to Government's Exhibit No. 599 which is a letter written to Mr. C. M. Stine of the du Pont Company in October, 1919, signed by K. W. Zimmerschied, Assistant to the President.

You will note that in the first paragraph he states:

"With reference to the matter of fuel investigations, I have discussed the situation with Mr. Durant and [fol. 3611] Mr. Kettering at length. Replying to your letter of October 2nd, to Mr. Durant, and referring to your memorandum of September 27th to the Eastern Laboratory, I find that the Dayton Metal Products Company is arranging to send you immediately a single cylinder engine and indicator, as covered in your

discussion of a plan for carrying out your fuel investigation, with Mr. Kettering. The Dayton Laboratories will continue the broad subject of fuel utilization in internal combustion engines, and your people will take up the development of chemicals which may be added to undesirable fuels for the purpose of converting them into usable products. I believe it is Mr. Kettering's idea to produce, if possible, something that may be added at slight expense in small quantities, in a convenient form."

Do you recall this letter, Mr. Kettering?

A. No, I do not.

Q. This letter was written, was it not, prior to the acquisition of the Dayton Metal Products Company by General Motors?

A. Yes, sir, it was, because I knew Mr. Zimmerschied very well. I had known him for years. He had charge of what corresponded to the General Motors research, and they had a contract with the Arthur D. Little Company of Boston to do a lot of their work.

Q. Would you say that General Motors, as evidenced by this letter, was interested in fuel research at that time?

A. I think it might have been, yes.

Q. I call your attention to the second paragraph in which it is stated:

"It is presumed that the marketing of this chemical will be a matter of interest to the du Pont organization, [fols. 3612-3614] and that the expense of developing it will be borne by your Research Department."

Do you recall at this time General Motors recognized that du Pont would be interested in the manufacture of any chemical useful in this fuel research?

A. No, this is all new to me. I never saw this before.

Q. I would like to direct your attention to the last paragraph on the other side of the page which states:

"For your information, Mr. Kettering has been appointed Director of all our technical and engineering developments and research work."

This was prior to the time that the Dayton Metal Products was acquired, was it, by GM?

A. It could not have been because I had nothing to do in General Motors Research until after our interests were acquired.

Q. Do you have any information, Mr. Kettering, why this letter refers to you as Director of Research, in October of 1919?

A. I haven't the slightest idea, because I was not. I had nothing to do with General Motors Research until after our properties had been acquired.

[fol. 3615] Q. I show you Government's Exhibit No. 580, and I believe this is the unsigned agreement to which you referred on your direct testimony, isn't it, the one you were asked to sign and you declined?

A. Yes, sir.

Q. Then you testified on your direct examination that there were a series of letters passing between you and Mr. Lamot du Pont in which he was urging that you sign the agreement, and that you were not very anxious to do so. And that it was finally dropped, as I recall your direct testimony, but wasn't this matter finally submitted to the president of General Motors, Mr. Pierre du Pont?

A. I would not know whether it was or not.

Q. I show you Government's Exhibit No. 594, and this is your final letter, I believe, to Mr. Lamot du Pont, in which you point out in your second paragraph of the letter that you considered that this contract is entirely outside of the range of the research laboratory, and you are therefore turning the matter over to the head of your corporation, [fol. 3616] and I show you now Government's Exhibit No. 595, which is your transmittal letter to Mr. P. S. du Pont, dated May 2, 1922, in which you state that you are enclosing a copy of the contract, together with a letter from Mr. Lamot du Pont and a copy of your letter to him.

Do you recall having any conversation with Mr. Pierre du Pont concerning this contract?

A. Well, we talked it over, I am sure, because I was—

Q. What was Mr. Pierre du Pont's attitude on this matter?

A. Well, I think Mr. Pierre du Pont's attitude on it was that he understood my point of view very much better than Mr. Lamot du Pont did because he had been in the motor car business long enough to realize what these problems were that we were working on.

Q. Do you recall anything further in that conversation?

A. No, I do not.

Q. I show you Government's Exhibit No. 598, which is a memorandum prepared by Mr. Lamont du Pont in November of 1922, in which he states:

"In conversation with Mr. P. S. du Pont he advised that it does not seem possible at this time to institute any plan for cooperation on chemical research work between General Motors Corporation, his feeling being that as problems come up special arrangements with reference to each should be made between the two companies, rather than attempt now to make a general arrangement to cover prospective cases."

Do you recall Mr. Pierre du Pont informing you of this decision?

A. Not particularly, no, but I remember when this was brought up because it was—it bore out exactly what we had been standing for, that you couldn't make a general contract because our applications of chemicals to the auto-[fol. 3617] motive industry did not conform with what you might say the conventions of the chemical industry were.

I mean, ours was a special application to a rather little understood industry at that time, because the automobile business had not developed into what it is now.

Q: As a matter of fact, in this letter written contemporaneously with the discussion with Mr. Lamont du Pont, by this time General Motors had already entered into a special arrangement with du Pont on tetraethyl lead, hadn't it?

A. Well, yes. What day is this?

Q. This is dated November 6th, 1922, and your contract with the du Pont Company was dated October 6th, 1922?

A. Yes. Well, that was for the manufacture and the controversy came out, and the difference came out between what you might say was the development of the model into which we didn't want to get involved—the experimental work we didn't want it to get involved with what you might say was the production phase of it.

Q. So that your objection was not that the du Pont Company would become the manufacturing agent of the General Motors?

A. No, we had no objection to that, because we wanted somebody to manufacture it, but we didn't want to have an agreement in which we would have the complication of two organizations in the experimental and developmental work.

Q. Now, I would like to go back to one of the letters in the series of correspondence between you and Mr. Lamnot du Pont.

I will show you, Mr. Kettering, Government's Exhibit No. 582, and I draw your attention to it. This letter is dated October 21, 1921, and you state:

[fol. 3618] "I found after my visit to Wilmington, in which this contract was discussed"—

"This contract" is referring to this general chemical research contract again?

A. Yes.

Q. (Continuing):

—"that the then Executive Committee of the General Motors organization was quite antagonistic to this proposition and asked us to delay signing the agreement. However, since the change in our organization, our problem, as we now see it, is entirely changed from what it was at that time."

Now, Mr. Kettering, in your first sentence when you are referring to the then Executive Committee of General Motors, you are referring to the Executive Committee of General Motors as it was constituted when Mr. Durant was president, weren't you?

A. Well, I am not sure.

Q. And aren't you referring to the change in your organization, to the fact that by this time Mr. Pierre du Pont was president of General Motors, and that the Executive Committee had been reorganized?

A. I don't know about that. I wouldn't know.

Q. You do recall, however, that this matter of this general chemical agreement continued from 1920 up to 1922, don't you?

A. Yes, quite a long while in there.

Q. And that this matter did, of this chemical agreement,

did come before General Motors back in 1920, didn't it?

A. I think it did.

Q. The change in top management in General Motors occurred in late November or December of 1920, did it not?

[fol. 3619] A. Yes; but the question whether we signed that contract or not had been left entirely to me as to whether we did or whether we didn't sign it.

Q. Can you explain what you mean in your sentence that states that after your visit to Wilmington you say that:

"The then Executive Committee of General Motors organization was quite antagonistic to this proposition."

Doesn't that indicate that the matter had been taken up in the Executive Committee of General Motors?

A. Well, it was taken up, but not by me. That is, I think Mr. Sloan, or somebody, told me about that, because I didn't have anything to do with the Executive Committee at that time.

Q. Now, how did the change in your organization, that you refer to in the second sentence, affect the problem?

You say that it has been entirely changed from what it was at that time?

A. I don't know whether that was changed in General Motors organization or in our research organization.

Q. You refer to General Motors only in the first sentence, don't you?

A. Yes.

Q. Wasn't there a feeling in General Motors at this time that because Pierre du Pont was now president of General Motors that it was unnecessary to have a formal type of contract between General Motors and du Pont?

A. No, we never felt that way.

Q. On the manufacture of—

A. No, we never felt that way. We always felt you had to have a formal contract.

[fol. 3620] Q. Wasn't it well understood at this time, however, that the du Pont Company was to be the manufacturer of whatever chemicals came out of—

A. Not necessarily, at all.

You see, the Dow Chemical Company always made our bromine for us, so it was not a—

Q. I show you, Mr. Kettering, Government's Exhibit No. 610.

On your direct examination you were shown this document, Mr. Kettering. Were you informed at the time this memorandum was written or subsequent to this, that Mr. Pierre du Pont had sent this information to Irene du Pont?

A. No.

Q. You had told Mr. Pierre du Pont, however, that you would like to take up the question of manufacture of this new material with du Pont, isn't that correct?

A. Yes.

Q. Did he tell you that he was going to take steps along that line?

A. He didn't. I just told him that I was going to—

Q. What was the first information you received that du Pont had become informed about the discovery of tetraethyl lead?

A. Well, I think we told them about it, Midgley or I told them about it.

Q. About the same time the patent application was filed, wasn't it, that Mr. Midgley wrote to the du Pont Company?

A. I think it is in there some place. I know we were not trying to keep the thing a secret.

Q. Is it customary to inform any other company about a discovery, a chemical discovery, which is patentable, before you file for a patent application?

A. Oh, it often is, yes.

[fol. 3621] Q. Don't you run the risk—?

A. Yes, you do, but then it is—but I have done that quite often.

Q. I show you General Motors Exhibit No. 256, and I would like to call your attention to the third page, the second paragraph. I believe you testified concerning that.

That is just the report, I believe, of Mr. Midgley's visit to the various companies including Standard Oil, in which I believe Mr. Midgley suggests that the Standard Oil Company undertake the erection of a 100-gallon plant for the manufacture of tetraethyl lead, and I would also like to show you in connection with this Government's Exhibit No. 622.

Did you talk to Mr. Sloan after you or Mr. Midgley had had this discussion with Standard Oil regarding the manu-

facture of tetraethyl lead? Did you keep Mr. Sloan informed of that order?

A. I am sure we did.

Q. Did you know that Mr. Sloan was not favorable to it, of having Standard Oil as the manufacturer?

A. No, I didn't.

Q. I call your attention to the second page of Government's Exhibit No. 622 in which he states, in the last paragraph:

"I question whether it will be good business from our standpoint for them to manufacture tetraethyl lead and at the same time have such a large slice of the distribution on same. I do not say that I fear we will not get a square deal, but that naturally comes into my mind. Anyway, I do not think it is constructive. I feel that in the final analysis the du Pont Company can manufacture the material at the lowest cost plus a reasonable return and that under such a consideration there would only be a manufacturer's profit in it for the Standard Oil Company and that they could employ their capital to equal, if not better, advantage in their own business than in the manufacture of tetraethyl lead and that our permitting them to get into that manufacture will be a disturbing influence and would throw an uncertainty on the whole situation that would not be constructive."

Did he ever inform you, did Mr. Sloan ever inform you of his attitude on his part?

A. No, he did not. The only time that Mr. Sloan had evidenced any negative attitude, so far as I could see, was on this hazard business.

Q. On the what, please?

A. On the hazard, the health hazard business. You see, we were all worried about that, and it did get them into trouble a little bit later.

Q. I show you now Government's Exhibit No. 624, and I direct your attention to the fifth page of this document. I believe this was called to your attention on your direct examination. You will note that the statement is made that Mr. Kettering "will be in New York sometime the latter part of this week, and I have asked him to see you in con-

nection with various operating matters connected with the workout of the present agreement."

Did you discuss with the Standard Oil people at this time the licensing under their new process for the ethyl chloride process?

A. No, I don't think so. I don't remember. I really didn't handle that license business personally with the Standard Oil.

Q. Did you have any negotiations with them outside of the licensing feature?

A. Just a little bit, but I think that Mr. Sloan and some of the attorneys handled that.

[fol. 3623] Q. I call your attention to paragraph 3 of this letter that is found on page 4. Do you see that, the paragraph numbered 3?

"As to your manufacturing tetraethyl lead for our account—"

If you will just read that to yourself first.

A. Yes, sir, I have read it.

Q. You received a copy of this letter, did you not, according to the carbon copies listed?

A. Yes, I did.

Q. Did you get the impression when you saw this letter that Mr. Sloan was not particularly anxious to have the Standard Oil people undertake the manufacture of the tetraethyl lead?

A. Well, I suppose you could gain that from this.

Q. I believe you stated on direct examination that you were made president of the Ethyl Gas Corporation when it was organized in 1924, I believe, and that you only remained president for four or five months?

A. A few months, yes.

Q. By whom were you succeeded?

A. Mr. Earl Webb.

Q. He succeeded you as president?

A. Yes. You see, I had been president of the General Motors Chemical Company, and this moving over was—

Q. I would like to show you now Government's Exhibit No. 676.

You stated on direct—pardon me, you can go ahead and look at that first.

This relates to the matter of the iron carbonyl. I believe you stated on direct examination that on one of your [fol. 3624] visits abroad you had been shown this substance by Dr. Bosch.

A. Yes.

Q. Of the German firm?

A. Yes, the I. G. Farben.

Q. And did you subsequently, after you came back from your trip, file an application for a patent on this substance?

A. No, that was included in one of our earlier patents, and we didn't file particularly on this, so far as I know, but it was covered in the fundamental basic patent on metallic organic compounds.

Q. Now, you had negotiations extending over a period of two or three years, did you not, with I. G. Farben regarding the obtaining of a license independent from iron carbonyl patents?

A. Yes, they sent us some of their chemists and some of their material over, and we spent quite some time going over that with them.

Q. Were you on the Board at that time as a member of the Board of Directors of Ethyl, were you not?

A. Let's see, what time was this?

Q. Well, 1924 to 1927.

A. Yes, yes, I had been on the Board of Ethyl ever since it was organized.

Q. And this Government Exhibit No. 676 is a memorandum of one of the meetings of the Board of Directors in which this matter arose for discussion?

A. Yes.

Q. Why was the Ethyl Company so interested in obtaining a license under iron carbonyl?

A. We weren't particularly interested in obtaining a license on it as the I. G. Farben Company was in selling it to us.

Q. These negotiations were continued for several years before you finally consummated an agreement?

A. Yes, but not so much negotiations as there were road tests and an attempt on the part of the Farben Company to overcome some of the difficulties that had come up in the road tests.

[fol. 3625] Q. Am I to understand that I. G. Farben was trying to interest you in taking a license under this?

A. Oh, yes, yes, they sent for me when I got back to Paris, when I was out on the bromine search. There was a telegram or cablegram awaiting me when I got back to get in touch with Dr. Bosch.

They were taking the initiative of trying to sell to us, rather than our buying from them.

Q. Then why was the du Pont Company called in to handle the negotiations of I. G. Farben?

A. Because they had a European office, and they knew these people and had done a lot of business with them, and I was a perfect stranger.

Q. As a matter of fact, wasn't the Ethyl Gasoline Corporation trying to obtain a license under any patent at this time related to a substitute for tetraethyl lead?

A. We are still interested in trying to get anything—

Q. Any chemical substance which might be competitive?

A. Oh, yes, we still are.

Q. And wasn't that the reason why you took this license under iron carbonyl?

A. I don't know whether we took the license or not, but it was covered primarily by our initial patents, and I think that the only license that could have been there was the specific method of making it, because the basic usage thing was covered in one of our patents.

In fact, Dr. Bosch told me that it was.

Q. Well, I draw your attention to the first sentence in the third paragraph of this exhibit, on the first page. You have Government's Exhibit No. 676 before you, Mr. Kettering, have you not?

A. Correct, I have.

[fol. 3626] Q. You will note:

"Discussing the patent protection it was thought likely that the general patents owned by the Ethyl Gas would not hold for all anti-knock materials. Opinion of an eminent patent attorney was read indicating that to be the case."

Then in the last of the paragraph it states:

"It was felt that it would be desirable, however, to obtain patent on iron carbonyl from the Badische Company if it could be arranged."

Wasn't this really, this negotiation, undertaken on behalf of the Ethyl by the du Pont Company to try and get a very good deal, if possible for Ethyl, and to obtain a patent license under any material which might be competitive to tetraethyl lead?

A. No, I don't think that was it. I think we tried to get something better. You must remember that this was right back in the time when we had a lot of discussions about health hazards and everything else, and it is hard to appreciate now what the negative attitude of the whole chemical industry and everybody else was towards these lead compounds.

Q. I show you Government's Exhibit No. 710. This is a letter written by Mr. Sloan to Mr. Irenee du Pont, and I draw your attention to the second paragraph of that letter in which it is stated:

"I was talking to some of the Standard Oil people today and they feel that it would be a very constructive thing if you would come in with us on this proposition. Du Pont will always be the manufacturing agent of [fol. 3627] Ethyl Gasoline Corporation whether we make tetraethyl lead or whatever we make, now or in the future. I am sure of that."

Did Mr. Sloan ever express this attitude to you?

A. No, sir, he did not.

Q. You never heard him express anything of this sort at the meetings of the Board of Directors of Ethyl?

A. No, I did not. Of course, they have not always been the manufacturers of tetraethyl lead, because we are—

Q. du Pont had not?

A. No, we went into our own manufacturing of it near the expiration of the patents.

Q. But at the time this document was written, in 1924?

A. Oh, that was, yes, but the part that—the question, the fact we said, "And they always will be"; but that didn't work out that way.

Q. It continued in that fashion, however, did it not, from the time the patents expired?

A. Yes.

Q. I show you Government's Exhibit No. 899. Your testified regarding the development of the fluorine compounds,

Mr. Kettering, and you were aware, I believe you so stated on your direct examination, that there was an agreement entered into between General Motors and the du Pont Company covering the manufacturing of fluorine compounds?

A. Yes.

Q. And there was the creation of another company, Kinetie?

A. Yes.

Q. Jointly held by the two companies?

A. That's right.

Q. I would like to call your attention to the third paragraph on the third page of this letter written by Mr. J. L. [fol. 3628] Pratt. Incidentally, was Mr. Pratt your superior?

A. Not at this time. He was at one time. You see, he was my superior but not at this time.

Q. Had he been your superior previous to this? This is dated 1931.

A. Yes, yes, he had. You see, he used to have charge of some of the accessory groups and in that respect he was my superior because I was general manager of the Deleo Company, and that is the one that made the lights and starting ignition for the automobiles.

Q. I draw your attention to the fact that it is indicated that you received a copy of this letter, if you will note the last page, where it indicates a copy to you and Mr. Sloan, and I would like to call your attention now to the third paragraph on the first page in which he says:

"I agree fully with practically all you have said in the third paragraph of your letter, in regard to lack of experience of General Motors in the development of chemical manufacturing processes and the operation of plant to carry out same. This was fully recognized when we entered into the agreement, under date of August 27th, 1930, with the du Pont Company for the formation of Kinetie Chemicals, Incorporated. Clause 7 of that agreement reads as follows:

"* * * * it being further agreed that future chemical developments (other than those relating to 'said products') originating in the laboratories of General, or its subsidiaries, shall be offered by General to the New Company on such terms as may be mutually

agreed upon, and if after six months the New Company shall elect not to exploit such new chemical developments then General shall be free to dispose of the same elsewhere.' "

[fol. 3629] Then he goes on to state:

"This clause was placed in the Kinetic agreement because we wanted to remove from some of our organization the temptation of attempting to build up within General Motors an independent chemical manufacturing activity."

Were you aware of such a tendency or attitude in General Motors?

A. Well, we had one or two men, Mr. Biechler of the Frigidaire, who wanted to get exclusive on this thing, and perhaps manufacture it as a part of Frigidaire because he wanted to keep it as exclusive because of the tremendous effect it would have on the Frigidaire business.

Q. It was a very valuable invention, was it not?

A. Oh, very.

Q. And it had great commercial potentialities, didn't it?

A. Well, not too great. I think the maximum business done in Kinetic is only \$21,000,000.00 or \$22,000,000.00 a year, but its multiplying factor in the refrigeration business is tremendous.

Q. Yes, as an adjunct to the refrigeration game it is an important invention, isn't it?

A. Yes, very, very. Of course, it made air conditioning in hospitals and that sort of thing possible, which we had never had before.

Q. Did you ever state to Mr. Pratt, after you received a copy of this letter, that you disagreed with this statement that I just read to you?

A. Well, John and I talked it over and I was interested in this, and of course, there are two things in that paragraph you read, sir.

Q. I am referring to the part that says, "This clause is [fol. 3630] placed in the Kinetic agreement because we wanted to remove from some of our organization the temptation of attempting to build up within General Motors an independent chemical manufacturing activity."

A. I say, the only one I know is the one that Mr. Biechler brought up in Frigidaire. This is the only thing that I had ever heard. But there is another—

Q. Do you know why this agreement was couched in terms to cover all future developments by General Motors?

A. It is not that. That should be "future chemical developments" in this particular line.

Q. No, I believe not, Mr. Kettering, because it states "other than those relating to said products." I think if you—pardon me.

Mr. Carpenter: I want to suggest that the witness had not completed his answer when he was interrupted.

Mr. Harsha: Very well. I wasn't aware I cut him off.

The Court: You may complete your previous answer.

By the Witness:

A. We had discussed this with—the interpretation I make out of that paragraph is this, that the products that we were interested in here were refrigerants. Now, there was a tremendous lot of other fluorinated compounds that we were interested in.

For instance, you take in installations for electrical machines and all of that sort of thing. We felt that all those ought to go through this particular Kinetic Chemicals, because the Kinetic Chemicals were only set up to manufacture chlorinated compounds.

[fol. 3631] Mr. Harsha: Is it your pleasure, your Honor, to have a recess?

The Court: Yes.

The Court stands recessed for fifteen minutes.

(A short recess was here taken.)

Mr. Harsha: Mr. Kettering, as I understood your testimony a few minutes ago, regarding this iron carbonyl patent, it was the I. G. Farben who was trying to sell you on the idea of taking a license, was that your position?

A. Yes, that was my understanding of it at the time.

Q. Now, I would like to show you Government's Exhibit No. 715, which is a letter written by Mr. Irénée du Pont to Alfred P. Sloan in June, 1926, and I call your attention to the second page of the document, the second paragraph, which states:

"Apart from this it is very important that the relations between the Badische Company, the greatest chemical manufacturer of Europe and even the world, and the du Pont Company, one of the great chemical

companies of the world, should be friendly, not only for du Pont's sake, but also for the sake of General Motors."

And then skipping over to the third page, the statement is:

"I don't altogether blame Badische for feeling sore. They know that Kettering saw a sample of iron carbonyl though they didn't disclose what it was and that they told him that material was a very good anti-[fol. 3632] knock. He was keen enough to recognize what the material was, return home and file a patent application thereon. Without knowing the prior history that appears to them to be rather sharp practice, though it would have been avoided if the Badische Company had been quite frank at the time and told Kettering that it was iron carbonyl, under pledge that he would not attempt to apply for patent on it."

Doesn't that truly state the situation, Mr. Kettering?

A. I don't think it does, no, because we knew that the I. G. Farben Company had made iron carbonyl long before I went over there, and we had written them months before. We had suspected that iron carbonyl was an anti-knock compound, and we had written them long before I went to Europe for samples, and they did not even answer our letters, but I do not remember of personally ever having applied for a patent on the use of iron carbonyl as an anti-knock.

Q. How about the last sentence of that paragraph I have just read to you:

"Also, from the Ethyl Gas side is it not wise to encourage improvement in anti-knocks knowing that they have a basic patent and are in control of the situation and due to improvement can get in the saddle more easily."

Isn't that precisely what Ethyl was trying to do to cure these improved patents on motors that might be suitable for tetraethyl lead?

A. No, this was not an improvement. The improvement mentioned in here was an improvement in the use of iron carbonyl because it was not a separate method at all.

[fol. 3633] Q. At the time of this correspondence in 1926,

you did not know whether iron carbonyl would be a successful substitute for tetraethyl or not, did you?

A. No, I don't think we did, but we knew it was an anti-knock material from our analysis of it, and as I say, we had written for samples before I went to Europe and saw the Badische people.

Q. You didn't know whether it would ultimately prove commercially successful at this time, is that correct?

A. We were pretty sure from what we had seen over there that, as it was being used, it would not be satisfactory.

Q. Now, I would like to show you Government's Exhibit No. 717, which is a letter from Mr. Lamot du Pont to Mr. Sloan, July 24, 1926, and I call your attention to the second paragraph of that letter in which he states:

"My personal feeling is that negotiations with Badische on iron carbonyl should be conducted by us, for the reason that not only will our relations with Badische be improved thereby, but I believe we will actually secure a better deal, due to the fact that du Pont Company has more lines of connection with Badische than either General Motors, Standard Oil or Ethyl Gasoline Corporation."

Wasn't this the reason why du Pont offered its services to conduct the negotiations with the I. G. Farben or Badische?

A. They had been doing business with the Badische Company for quite a long while, as I understand it.

Q. Now, you testified that after the discovery of tetraethyl lead, you had several conferences or visits both in Dayton, I believe; and also in Wilmington, with various officers or employees of the du Pont Company preparatory [fol. 3634] to interesting them in the manufacture of tetraethyl lead. Do you recall that?

A. Yes, sir.

Q. You did not find the du Pont Company very hard to interest in this matter of undertaking the manufacture of tetraethyl lead, did you?

A. I did not find them very enthusiastic, either. I mean, they were not rushing us for business. I mean, we had to convince them it was the right thing to do.

Q. I would like to show you Government's Exhibit No.

613, which is a memorandum written by Irene du Pont to three of the employees of the du Pont Company, in which you will note he states that he is anxious for them to sell General Motors on the ability of du Pont to undertake the manufacture of this tetraethyl lead.

In your subsequent negotiations with these men, did they evidence any reluctance to undertake it?

A. No, not any reluctance, but they wanted to be paid for the thing.

Q. They wanted to be paid for it?

A. Yes.

Q. Now you were shown a Public Health Bulletin, G. M. No. 262, which was entitled, "The Use of Tetra Ethyl Lead Gasoline in its Relation to Public Health."

Are you acquainted generally with this report?

A. Fairly so, yes. I knew Dr. Cumming, and of course Dr. Fellingham, and those fellows who did the work for us at the Bureau of Mines. I know their work very well.

Q. In this report, which I gather was prepared by the direction of the Surgeon General of the United States, there were certain regulations proposed.

Do you know whether those proposed regulations were adopted or became binding in any way?

A. Well, I know a series of regulations came out of that [fol. 3635] which have been used ever since. One was, the maximum amount of automobile gasoline can't have over three cc's of lead in it.

Q. You are acquainted with the fact that there was a set of regulations issued covering the manufacture, the distribution and the use of tetraethyl lead. Do you recall that?

A. Yes, but I don't know what those were or whether they have been subsequently changed.

Q. Now I show you, on page 20 of this document, which is headed, "Proposed Regulations for the Manufacture of Tetra Ethyl Lead."

Those are the proposed regulations which are to be followed by any company undertaking the manufacture of tetraethyl lead, am I correct?

A. Well, I imagine. As I say, I don't know whether these were finally adopted or not.

Q. Well, these or others slightly modified were finally adopted, is that correct?

A. As far as I know, they were.

Q. Was the import of these regulations that if these regulations were followed, then tetraethyl lead could be manufactured safely in the opinion of the Surgeon General?

A. The Surgeon General and his committee, yes.

Q. And this report does not confine, does not single out just the du Pont Company as being the only qualified one to manufacture this substance, isn't that correct?

A. No, I don't think so.

Q. These are of general import?

A. That is right.

Q. I believe you also stated on your direct examination that in your research projects in General Motors that you graded, if you will, the various research projects to be undertaken by men under your supervision, and you arranged them according to their commercial significance or [fol. 3636] importance to the automobile industry or to General Motors, more precisely.

Am I correct?

A. It had to be for the industry because we couldn't do a thing like tetraethyl lead for General Motors alone. It had to be for the whole industry.

Q. Yes. And I think you said that in ranging them in importance that the development of a pyroxylin finish or a "Duco" finish and invention of tetraethyl lead were of the same relative magnitude of importance, is that correct?

A. Yes, that is right.

Q. Now, isn't it also true that any company who obtained the manufacturing rights for these two compounds, namely, a "Duco" type finish and the tetraethyl lead, would have a very important segment of business in relation to the automobile industry?

A. Oh, I imagine they would, yes.

Q. You referred to this committee, I believe, that was composed of certain paint manufacturers?

A. Yes.

Q. And paint chemists, et cetera, who have done over the years certain testing on the durability of paint finishes?

A. Yes.

Q. And you say that it has been your conclusion that a "Duco" finish is probably among the best?

A. Yes.

Q. And now in using the term "Duco" there, you were referring to "Duco" in a generic way, were you not?

A. Exactly, yes.

Q. You were not referring to the trade name?

A. The du Pont Company "Duco," no.

Q. Now, you also stated, I believe, on direct, that you did not become acquainted with Mr. Pierre du Pont until [fol. 3637] after he became the president of General Motors, which I believe the records show at the end of 1920, and that you didn't know Irene du Pont or Lamont du Pont until perhaps sometime after that.

A. This is right, as I remember. That is right.

Q. Do you recall, Mr. Kettering, that you were a participant in the syndicate agreement for the buying and selling and supporting of the value of General Motors stock in June of 1920, in which the du Pont Company and Mr. Irene du Pont were parties?

A. I wouldn't have been in that at all because Colonel Deeds and Mr. Talbott handled all that for me. I never had anything to do with the stock end. It was handled by those two men.

Q. But you recall you were a signatory, were you not, to that agreement?

A. I imagine I was, but I never attended any meetings.

Q. Now, I gather that on your direct examination you stated that apparently in late 1923 and perhaps in early 1924, you had some contact with people in Standard Oil regarding their manufacturing or their new process for the manufacture of tetraethyl lead, and then you stated that most of the negotiations with Standard Oil were later on conducted by Mr. Sloan.

A. That is the contractual relationship that led up to the formation of Ethyl Corporation.

Q. And after Ethyl was formed, did you have much in the way of negotiations with Standard Oil regarding this tetraethyl lead?

A. Not too much, no.

Mr. Harsha: I think that completes my examination, your Honor.

Mr. Carpenter: If the Court please, I have a few questions on redirect.